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ABSTRACT

This book contains papers presented at a conference on educational promise, performance, and expectations. Papers included in this volume are: (1) "Education in Australia: We Get What We Deserve" (S. Ball); (2) "The Size and Scale: What is Expected" (J. G. Owen); (3) "The Search for Educational Quality and Equality: A U. S. View" (A. Harry Passow); (4) "Community Expectations and the Secondary School Years" (C. W. Collins); (5) "Grading Schools--What Do We Expect and How Do They Rate" (N. Baumgart and C. Power); (6) "Giving an Account: Critics and Questioners" (J. G. Owen); (7) "Getting on with It: Classroom Disruption in the Primary Grades" (P. O'Brien); (8) "Pupils' and Teachers' Expectations for the Achievement of Year 4 Children" (J. Belme); (9) "Relationships between Family Characteristics and Primary School Related Outcomes" (A. Clark and P. O'Brien); (10) "Applications of Need-Press Theory in the Study of Australian Educational Environments" (J. M. Genn); (11) "Teaching and Learning in Higher Education--Promise and Performance" (J. Lublin); (12) "Educational Expectations--Today and Tomorrow: Common Curriculum and Individual Differences" (A. Harry Passow); (13) "The Physical Environment for Teaching and Learning" (C. J. McGuirk); (14) "All-Round Education: The Need for Personal Convictions" (M. F. Cusi); (15) "Challenge of the Eighties: Bringing Information Technology to People" (F. Barr-David); (16) "Communication and Expectations: The President's Address" (E. G. Eden); (17) "Expectations of Research in Colleges of Advanced Education" (J. G. Sekhon); and (18) "Making a Political Issue of Tertiary Education" (G. W. Jackson). (CJB)

The Australian College of Education

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WHAT DO WE EXPECT OF EDUCATION?

Selected papers from the Twenty-fourth Annual Conference of The Australian College of Education held in Sydney, 15–20 May 1983

R Philps and A.G. Shannon

Editors

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PREFACE

While this book is based on the proceedings of the Twenty-Fourth Annual Conference of the Australian College of Education, it is impossible to record all that was presented to, written for, or debated during a conference like that. Practical exigencies of space, cost and so forth aside, there are good reasons for not tying a volume like this too closely to a conference which depends upon the spoken word. In the first place, the print medium cannot readily capture the cut-and-thrust of debate, the wit of a topical but off-the-cuff aside, or the insights and emphases conveyed by tone and speaker personality. Secondly, this volume is intended to stand by itself as a contribution to the ongoing debates about the condition and future of Australian education. Consequently, the selection of material for this book was shaped by the need to appeal to a wide group of readers. A list of all the major papers presented at the conference appears at the end of the volume; some of those listed but not appearing herein will be published in other places. An effort has been made to include material relevant to all levels of education.

For the papers which have not been included in this work, the reader will be given a framework for putting them into context if she/he reads the Introduction. Thereafter the structure of the volume is that which underlay the Conference itself, with four sections helping to make manageable the very diverse material.

The allocation of papers to one or other of the sections has been at the behest of the idiosyncratic fancies of the editors. Many contributors themselves, to say nothing of the general readership, will wonder why some articles appear under sections chosen and not under another they would have chosen themselves. The process used and the end result, however, are not crucial. More important is the quality of the work on display here. It is hoped that readers will experience the interest and challenge that these papers brought to the Conference and will thus feel stimulated to carry the debates and reflections further.

July 1983

Reg Philps
Tony Shannon

INTRODUCTION

The theme for the twenty-fourth national Conference of The Australian College of Education *Educational Expectations: Promise and Performance* was significant and stimulating. In addition it was timely — in the sense that it could easily have come too late!

The Conference was conceived as an educational stock-taking venture. Difficult financial times have meant limited resources for education and a smaller share of a diminishing economic cake. Yet, even if our monetary problems were suddenly resolved would we not still have educational problems of a fundamental nature: purpose and unity, means and ends, freedom and responsibility? We cannot utilize material means effectively if we are not clear about educational ends.

Our concern was to examine many aspects of inputs and outcomes in education. We proposed to do this by consideration of expectations at three levels — the broad societal level; an intermediate level of groups within society whose members are personally affected by promise and performance aspects; and at the formal classroom level of teaching-learning situations.

Thus, within the framework of the overall theme, four sub-themes emerged:

Sub-Theme I: Societal Expectations
At the broadest level we sought discussion about what we can legitimately expect from educational systems. What should be/are/have been the objectives and aims of schools and tertiary institutions?

Sub-Theme II: Expectations and Social Groups Within Society
At the intermediate level we focused on the scope and nature of education and schooling as perceived by groups within society — parents, employers, special groups (distinguished on the basis of ethnicity, handicap, economic circumstances, level of education).

Sub-Theme III: Teaching-Learning Environments
At this level we focused particularly on pupil-teacher expectations and performance, and various aspects of the environment in which this takes place.

Sub-Theme IV: Educational Expectations — The Future
We delineated issues for further study and development arising from or suggested by the addresses and discussions of the Conference, especially as they relate to the implications for education of computers and communications technology.

The Conference, and particularly its first sub-theme of *Societal Expectations*, was launched by Professor Ball. Using the analogy of the complexity of family life and relationships, Ball emphasised the pluralistic nature of Australian society, the danger of accepting stereotypes and the consequent difficulty of gaining community approval for any educational propositions other than those couched in the most general terms. A crucial problem, Ball felt, is operationalising 'societal expectations'.

His argument jibed well with some of Owen's thesis in his first paper, 'The Size and Scale: What Is Expected'. Owen commented that there was a need to translate workable ideas into the kind of practice which not only appears to succeed but which can also be assessed, measured, judged. Expectations, said Owen, are a matter of both rhetoric and reality whether they are expressed by governments, communities, parents or others.

Passow's initial paper took a look at 'The Search For Educational Quality and Equality'. Expectations as expressed in the U.S. framework are concerned with

'provision of "quality education, good and appropriate education, for all children and youth".' Of particular interest to Australian readers will be his assessment of the accountability and the minimum-competency movements as expressed in the actions of legislators, courts and other agencies: the 'T & E' or 'Thorough and Efficient' saga in Jersey is presented as a case history. The pertinence of his review was underlined by the news item which appeared the day following his paper:

> The Law Society of N.S.W. and the Victorian Law Institute said the time was not far off when teachers could end up in court for "intellectual injury". They warned teachers to protect themselves against legal action by making certain their advice was correct, and always getting confirmation that they were acting in the course of their employment. (*The Australian*, 17 May 1983)

Dr Cherry Collins is known for her research into expectations of various groups with an interest in schools and it is therefore highly appropriate that her paper should introduce the second sub-theme, *Expectations and Social Groups*. Rather than reiterate material available elsewhere in her writings, Dr Collins challenges educators to use their expertise to explain to groups the nature of what they are endeavouring to achieve. Of five traditions she traces, Collins urges educators to build relevant schooling based on social reconstruction.

Collins cast some doubts on the value of surveys of public opinions about schools. Readers will thus find it interesting to compare her viewpoint with that put forward by Professors Baumgart and Power in the paper which follows hers. Owen, in his second contribution, appears to recognise merit in both views. The Chief Education Officer from Devon outlines some of the ways in which expectations are manipulated before concluding

> The expectation which society, the family and the world of work entertain about education is bound to be high, difficult in its demands, over-broad and sometimes self-contradictory. But we cannot say that it is wrong. Our task is to understand what is expected, to work hard at making expectation well-informed, and then to meet it.

Section III deals with educational expectations and performance within the framework of *Teaching-Learning Environments*. Within the context of the Conference this was done in three parts: the first was a Forum in which three panelists outlined shortcomings they perceived in the teaching-learning environment.

Unfortunately, by its very nature, such a Forum runs foul of the sorts of limitations imposed by the print medium which the Editors alluded to in the Preface of this volume, and therefore it is impossible to publish the notable contributions of these critics and educators. The panellists were Dr Shirley Smith, author of *Schooling: More Or Less*; Mr Alan Jones, Executive Director of the Employers Federation of N.S.W.; and Mr Greg Sheridan, education correspondent with *The Bulletin*. Responding to their papers were Dr Allan Pattison, Director-General of NSW Department of TAFE; Dr Ian Paterson, Headmaster of Knox Grammar School; and Brother Kelvin Canavan, Deputy-Director of Catholic Education in Sydney. This whole steaming cauldron was presided over by Emeritus Professor Bill Walker, Chief Executive and Principal of the Australian Administrative Staff College.

It would be unfair to have printed only one or two papers from this group. However, because several speakers at the Conference as a whole were less than laudable in evaluating the performances of schools, in the interests of balance we wish to report that several of the Forum speakers were more optimistic. Brother Kelvin, for instance, observed (especially in relation to primary schools) that schools exhibited a greater sense of purpose; a more stimulating environment; a curriculum that is more relevant, particularly in language and social science; greater provision for executive training; and are more integrated into communities than ever. In the lively

discussions following the Forum, both panellists and questioners were able to reinforce their positions and prejudices!

The papers which have appeared in the third section in this text were invited or contributed by various researchers and writers.

Three papers arise from Macquarie University's Mt Druitt Longitudinal Study. Though the data are from local (Sydney) studies, we believe their applicability is Australia-wide and make no apology for their inclusion. Ann Clark, Jillian Belme and Dr Peter O'Brien have provided much material for argument and, indeed, attitudinal change on the part of teachers.

Genn reports upon an on-going series of studies emanating from Queensland University. The material he presents will be of interest to teachers at all levels of education, from pre-school to university. Ms Jacqueline Lublin has focused more narrowly, her concern being the promise and performance of teaching at tertiary level. Her conclusions may not surprise, but the lucidity and cogency of her arguments make this paper a most valuable contribution to an area many would see as urgently in need of change.

To these we have added, in this present volume, a keynote address by Professor Passow which seems to us to speak as much to *Teaching-Learning Environments* as it does to Sub-theme I. Having raised and discussed a number of critical issues which have been examined by noted Scandinavian writer, Torsten Husén, Passow concluded his account of 'Educational Expectations Today and Tomorrow: Common Curriculum and Individual Differences':

> No single program or curriculum or instructional strategy will enable us to provide good and appropriate education for any group. We need to understand what elements of education are common and which must be differentiated and individualised.

In the light of debate around Australia, particularly in regard to education for post-compulsory years, Passow's paper would be most timely.

Chris McGuirk brings the background of a former university teacher and a current parent, and many years involvement in school design, to his talk on the physical environment. He also documents many aspects which the busy teacher might overlook and yet which cannot be ignored in the total educational process.

Dr Cusi's article issues a strong challenge to tertiary educators, but the challenge could be thrown down to teachers at all levels. It raises the most persistent and most profound questions about education and deserves wide consideration for insisting that we face the fact that we can scarcely determine the quality of our performances unless we know where we are going.

The limitations of print medium are no more exquisitely illustrated than in relation to the first paper in the fourth section *Educational Expectations and the Future*. When presented, Barr-David's paper was accompanied by slides, equipment and assorted teaching aids. The paper convinced the audience, without obfuscation, of the complexities, problems and potential benefits of the information technology explosion. We believe it has value for a wider audience, even without the accompanying aids.

Print and the newer technologies are also the focus for the paper, delivered as the College's Presidential Address, by Dr Eva Eden.

Two papers in this final seciton are specific to tertiary education. Peter Sekhon appeals for the right of non-university institutions to grant doctorates, while Graham Jackson challenges tertiary educators and administrators to note the tactics of

powerful sectional groups in the community *vis-à-vis* governments and to go forth and do likewise.

Conclusion

Where do we go from here? After Dr Barr-David's address and paper, we are personally motivated to re-assess *Nineteen Eighty Four*! As older brothers in largish families we have always been able to cope with 'Big Brother'; but as writers with a love of language we are terrified by 'Newspeak', especially after goggling at Dr Barr-David's 'in' language. We are amongst those referred to when the more contemporary of Orwell's characters thunder *oldthinkers unbellyfeel floppy disk*. Now, as perhaps others are already doing, we are determined to become more 'waferphilic' or 'silichipliterate'.

The national Conference rightly highlights the ongoing concerns of educators and of the College and its members. In that last few years we have frequently voiced concerns about attitudes and expectations in education. The twenty-fourth Conference has provided a particular focus for those concerns. We leave to our readers the task of drawing forth conclusions from the many thoughtful contributions that are enclosed in the pages which follow. We ourselves are convinced at least of the need to strive for a higher level of consensus in a framework of participatory democracy. We may not be futurists, as Professor Passow observed; but we'll have to try to be so. Even if we can do no more than reduce the possible futures to a handful, that we must do — and set about planning strategies for each of them.

Sydney
July 1983

P. Lamb
R. Philps
A.G. Shannon

SECTION I:
WHAT SOCIETY EXPECTS

EDUCATION IN AUSTRALIA — WE GET WHAT WE DESERVE

SAMUEL BALL

As I see it, societal expectations are to education as family expectations are to child-raising. Society and education are the macrocosm; family and child-raising are the microcosm. The phenomenon is basically similar. The analogy holds true, I believe, in a number of ways. I shall begin by describing a particular family (hypothetical of course) but I hope you can identify with it.

This family seems rarely to be single-voiced in how its children should be raised. One grandmother is rather religious and wishes, a little forlornly, that her two granddaughters were brought up in the strict proprieties and rituals of a proper religious environment. (She settled for the children being Christened.) Another grandmother is rather a free spirit and sees independence of mind as a chief asset. (She compromised by coming to the Christenings.) The surviving grandfather and uncles share a loving acceptance of the children and don't care much how they are raised as long as they are playful and happy. Mother enjoys organisation and keeping to a routine. Father on the other hand tends more to the chaotic, or as a headmaster once euphemistically termed it, the inspirational. So the children have learned to adjust their behaviour depending on who in the family they are with. Each member of the family in turn looks at the children through a somewhat different filter of expectations.

Our society, rather like this family, is *pluralistic*. Different groups, like different relatives, have different ideas on what is right and proper.

Indeed our Australian society, from its inception as a European outpost, has been a 'heterogeneous melange of diverse groupings'. Even 130 years ago it consisted of convicts, army corps, governor's officials, free settlers, goldminers, Chinese, Irish, and Scots. They had all developed their own groups. You can multiply the number many times today. Nonetheless stereotypes of a unitary Australian character with a unity of expectations have emerged. But such stereotypes of Australian society are myths. At best they are a coating of wishful thinking surrounding a kernel of half-truth. At worst they are a hallucinatory pill flogged and popped by Australian writers as a part of their poetic licence to distort reality.

We are a society made up of different groups with different aspirations. Our current prime minister won an election promising to bring us together. We know what election promises are. Like names of political organisations they tell us what the organisation is *not* rather than what the organisation *is*. My best example is of the organisation that led the riots on Columbia University's campus in 1968. Their name was *Students for a Democratic Society*. The members were, by and large, not students nor advocates of democracy. Nearer home, consider the names of our major parties — the Labor party is increasingly dominated by members of the middle class and academics, the Liberal party is not demonstrably liberal, and the National party far from being national represents vested rural interests. So when a political party and its slogan promises to bring us together we must understand that there is a hidden snag in there somewhere. Indeed, the fact, as illustrated by Australian education, is that we don't want to be brought together. Even a cursory glance at Australia's systems of education show us that we have different state systems of public schools, a myriad of independent private schools, several sets of Catholic education systems, and now a burgeoning number of Christian schools.

How does this educational manifestation of pluralism affect us? A degree of variety is one benefit, I suppose — at least for those who can afford to buy a different kind of

education if they want it for their child. The related aspect of that argument is seen in the current debate over elitism in education. As Lewis Lapham, the newspaper columnist, points out: 'In the hierarchy of opprobrium the epithets "elite", "elitism" and "elitist" stand out well above the lesser invectives of "fascist", "racist", "communist", and "sexist pig". To denounce your opponents as elitists is to excommunicate them from the "Loyal Order of Australian Ockerism". Even if they have no pretensions of ockerism the charge of elitism will send your opponents into a defensive cringe.'

The irony and perversity of the situation should not escape us. I have yet to meet an Australian who did not in reality consider him or herself a member of an elite. Even being an Australian means, as we all know, we are members of a special chosen group. We are the best fighters, sportsmen and women, cleanest, luckiest people in all the world. We are supporters and members of the best football team. We are obviously superior to the people down the street or in the next suburb. We divide into a myriad of different trade unions even when we work in the one industry. And we belong to the right clubs which you have to be chosen to join, be they RSL, Diggers, Workers, Union, Mandarin, University, or Old Boys. But one thing we aren't — we aren't elitist.

Clearly then, we are all members of groups with special interests. Education for better or worse reflects that fact. Nonetheless, some groups, perhaps out of their self-interest, argue for a unified, fused society and for a unified school system that will first help achieve and later reflect that unified society. Is that really such an awful goal?

Let's go back to our family analogy again. You will recall that its members had different standards and aspirations concerning bringing up the children. But not all the families in their suburb were like that. A few were unified. One was a family all of whose members had the same strongly held traditional religious beliefs; there are other families where the father rules supreme and some where the mother is in complete charge. Father (or mother) knows best and there is no dispute about it.

Some societies are like that. Mother Russia is a current example, The German Fatherland of the 1930s and 40s is a recent unlamented other example. The totalitarian approach, unlike our pluralist society, makes it quite clear what is expected of the educational system. So too did so-called 'primitive' traditional societies. For example, consider this West African bush school:

> We find at the preliterate level a highly formalized educational institution. The school is set apart . . . although the educational activities are much more closely correlated with the purposes they serve than is the case in Australian schools. The values are more immediate and personal.
>
> To begin with the school amounts to a kind of secret society, separate societies being maintained for boys and girls. Training is a prerequisite to acceptance as a worthy and responsible member of society, as an initiate. The schools are held in special sections of forests set aside for the purpose . . . Once a pupil has entered the premises he may not on any account leave until his schooling is completed. The principal figure in the boys' school is a leader of great mystic power and prestige. He commands high respect not only among his pupils but also among the chieftains and elders of the tribes. He is well versed in 'native lore, arts and crafts', and 'in the history and traditions of his people'. He is assisted by a number of specialists in the various fields of instruction. On festive occasions the principal robes himself in costumes of great splendor . . .
>
> Upon entering the forest the boys, under the tutelage of their teachers, erect the village that is to house them during the school term . . . They maintain the buildings, till the fields, and receive instruction in the various arts and crafts of tribal life, as well as training in the art of warfare and in various sports and other forms of recreation and in hunting. Instruction is also received in family and tribal life . . . Thus while the 'bush' school is set apart from the normal

life of the village and the chiefdom, this life is in large measure re-created, with the result that the values retain much of the personal aspect of informal education.

> When the term of instruction comes to an end and the school and the accomplishments have been inspected by representatives of the chief, the boys return to the village amid great pomp and ceremony ... Afterward they return to their homes with full privileges of citizenship, and even new names by which they are afterward known to the initiated — and all of this serves to bestow social sanction upon the schooling ... One cannot escape the reflection that from the point of view of their aims and purposes these schools must surely be remarkably efficient. (Stroud, 1956)

It is probable that the education system of a totalitarian or traditional tribal state is more efficient. But our society is not totalitarian nor do its members share a common set of values. When members argue about how best to bring up Johnny, efficiency goes out the window. Consider the experience of Bob Feldmesser, a colleague from Educational Testing Service in Princeton, NJ. The New Jersey State Board of education asked him to conduct a study of the citizens of their state to find out what were the priorities of the citizens in terms of educational goals. Dr Feldmesser held meetings with Parent-Teacher Associations, administrations, town councils — wherever he could get a representative group together. What he discovered was that the educational experts put high up on their lists of educational goals independent, critical thinking. Students, the experts argued, were educated when they were able to challenge authority with valid arguments. Most parents on the other hand wanted foremost that schools give their children a respect for authority — none of that hippy, radical stuff. Learn to do what you're told was what they wanted.

One sees the similar problem of contrasting ideas on what constitutes a good education among sections of the Australian community. University administrators and upwardly mobile families think a good secondary education is one that prepares for tertiary studies. And that is fine for those families. But many segments of Australian families think that tertiary studies are for snobs, the wealthy and effete, geniuses, and other weirdos. Certainly not for them. Because the curriculum of the later years of secondary school are heavily influenced by the universities, it is small wonder that the majority of Australians don't bother to finish high school. In short, inasmuch as our education system at the senior high school level caters only for the tertiary bound student it does a reasonably efficient job for that minority segment of the high school population, and a miserably inefficient job for the rest, as Crittenden shows:

> Schooling for perhaps two-thirds of adolescents is at best inefficient, it is commonly simply destructive and brutalizing for everyone involved. It is a gigantic absurdity.
> (Frank Musgrove)

> Normal adolescents can find themselves and grow further only by coping with jobs, sex, and chances of the real world — it is useless to feed them curricular imitations.
> (Paul Goodman)

> Schools are the graveyards of desire. (Slogan on the wall of a Melbourne school)
> (Crittenden, 1981)

Thus, the analogy with the family is still consistent. In the family, too, one member may be more dominant at one stage of the child raising and get his or her way. Some of the children may develop during that stage in ways that satisfy that member, but other children may do poorly and the results may be unsatisfactory for them. In our family scenario we noted that the two grandmothers had rather different ideas on how the children should be raised. From their own values both were correct. From the other grandmother's values both were wrong. We see the same struggles in our society regarding education. Consider, for example, single-sex versus co-education at the high school level. Some in our society see single-sex schools as the hope of the academic student who will not be distracted by the opposite sex. Stalwarts of the

co-educational schools tend to concentrate on the naturalness of co-education forgetting that schooling is itself not a natural process but one contrived by our culture in which division of labour has become so necessary that we think only once or twice at the possibility of some women soon specializing in carrying somebody else's foetus after in-vitro fertilization of an ovum. When a woman gives birth to another woman's baby that indeed will be the ultimate, literally, in division of labour.

Those favouring single sex schools were ascendant in the first half of the century. Those favouring co-education are in the ascendant today. But one is not right and the other wrong. Educational evaluation research makes it even clearer for we see that there is no such thing as an unmixed blessing and no such thing as an unmitigated curse. Smith and Marsh in a study of single sex versus co-education found, for example, that girls' self-concepts were enhanced in some areas (like reading and neatness) when moved from single sex to co-educational schools but lowered in other areas (like sports ability). So, fortunately, our pluralist society continues to maintain a variety of schools. Different segments of society with different values can, with some luck, find the school that best suits their values.

One aspect of my hypothetical family you might want to think more about is their wish to put on a better front when setting standards for their children than when setting standards for themselves. Grandfather insists on lecturing the children on the evils of drugs and only stops his fluent oration for an occasional puff on his pipe (stuffed overfull with tobacco). Father likes to tell the children they should help their mother more with the chores around the house and he is especially insistent after his Saturday golf and Sunday sailing.

Our family has its hypocritical moments but it pales in comparison to the hypocrisy of society as it sets down educational policies and practices. Schools aren't supposed to mirror our society. If schools mirrored society, they would be shut down fast for corrupting morals and contributing to the delinquency of minors. Schools are supposed to mirror the 'best' and 'purest' of society. Students must never behave like parliamentarians in parliament, like crowds at a football game or a one-day cricket match, or like merchants taking over each others' companies.

Perhaps most plainly we see society's hypocrisy among our leaders, all of whom tell us that our children are our future and that education is our best investment. Is this what they really think or is this their public image at work? I'll believe politicians are really serious in their concern for education when schools are fully funded and when Cabinet has to hold a toffee day to help fit out the VIP planes with nice carpets and mats. Or when the Defense Department holds a fete to buy instruments for the Eastern Command Band.

Another interesting aspect of our family is that, while all members can agree in general principle on certain aspects of child raising, arguments develop when these principles are operationalized. Thus Mother and Father both agreed on the importance of the children doing well at school. No sacrifice, they told themselves, should be too big. However, when Father's boss told him to take his annual vacation in March there was a terrible argument. 'Let's take the kids to the Gold Coast', said Father. 'And take them out of school?' responded Mother.

So, too, our society, despite its pluralism, is in fair agreement on certain educational policies if they are couched in vague and general enough terms. The problem of interpreting those policies in practical situations is a real problem. Consider the true story from the early 1970s in a small town in Wyoming, USA. The local Veterans of Foreign Wars wanted to promote good citizenship and loyalty among the students of the local high school. No problem. An annual essay competition, with prizes of course, was established. The topic was on loyalty. One year all hell broke loose. The English teacher in charge awarded first prize to a student who wrote about how she

opposed American involvement in Vietnam and as a loyal citizen who loved America's reputation she resented it being besmirched by foul deeds in South-east Asia. The truly loyal American citizen would oppose the government when the government made gross errors. This essay was not appreciated by the donors of the prize who suggested the alternative of firing the teacher.

The problem of operationalizing lovely-sounding goals can be seen much closer to home. Consider these societal expectations:

1. It is important to foster the individual talents of each child.
2. Education should respect the individuality of the students and foster their developing individual personalities.
3. Parents are part of the educational environment and the school should be in a two-way partnership with the parent.

In practice we get arguments:

1. We want to foster the individual talents of each child but schools have to keep each child locked into his/her grade level with his/her age peers. It is too hard to administer otherwise. An 8th or 9th grade student from overseas with four years of French lessons goes into a first level French class in Australia because that's all that can be done for a year nine student. Is that individualizing education?
2. We want to respect individuality but every student must come to school dressed exactly alike (in uniforms). They would compete otherwise and, besides, it is less expensive.
3. Certainly parents are important to the school. My local high school's first letter to parents this year consisted of two pages. 40% dealt with fees and charges; 20% dealt with the school uniform; 15% dealt with the student contact with the school and with teachers. Nowhere are parents invited to participate in the school in any fashion except by sending a cheque.

The major point I want to make here is that our rhetoric can be grand and we can all agree on the importance of the generalities. The practical implementations of them is quite another thing.

Finally let us take a last look at our family raising its children. The family may not agree on everything but it tries hard and it is sincere in its hope to do a good job and raise a presentable child. Unfortunately, it discovers that while it is held responsible for bringing up the children there are other influences at work. Our hypothetical family, for example, makes sure never to say rude words in front of the children. Imagine the horror then when a note came home from Sunday School complaining of the rude words uttered by one of the children. 'Where did you learn that rude word?' asked Mother. 'From watching the Prime Minister on television and from playing with the little boy down the street.'

Very similarly, society sincerely wants to renew and purify itself through the work of its schools. It would indeed be churlish to suggest our society does not try. Unfortunately, our society, like our family, finds itself not always in control. Influences come in from other societies. TV from the USA causes our children to say 'trash can', 'loo-tenant' and 'zee' instead of 'garbage bin', 'left-tenant' and 'zed'. But vocabulary and pronunciations are but a trivial manifestation of a more vexing problem. If we treasure Australian society and education with its inconsistencies and muddle, how can we educators stop it from becoming a mere reflection of overseas societies and values?

The answer perhaps lies in a convenient truth. Our education, like HAL in the movie *2001*, has a life force of its own. Education not only is influenced by society's

expectations — it influences society's expectations. The little bush schools, the easy going high schools near the surf, the academically oriented schools in the professional suburbs and the working class schools of the outer suburbs are all imperceptibly but surely having their impact on society's expectations. We educators and students are not only driven; we also drive.

Our analogy has led us to consider a number of propositions about our society's expectations concerning education. We have seen that societal expectations for education are many and are not mutually consistent; that stereotypes about our societal expectations abound, and are false because they fail to recognise the complexities of the picture. As a society we cherish our internal differences, our special groupings, our personal values. Elitism is used as a negative epithet in speech; but in reality elitism is part of the Australian way of life. Despite this there are groups within our society that seek to homogenise us. As they argue it, the talented, the religious, and the snobs, too, should not be allowed to develop in different schools or educational systems — at least not at society's expense. However, we have seen the potential cost to our democratic principles if education is unified under one set of expectations under a master plan.

Our analogy with the family led us to consider some of the problems a pluralist society has presented for educators. It has also led us to see that society expects not true reflections of our current standards but rather polished-up images of how we'd like to be seen. We can call this hypocrisy or we can call it a phylogenetic urge to improve our society.

The last set of observations about societal expectations for education included:

1. The problem of operationalizing expectations. What in practice are meant by such goals as loyalty, good citizenship, respect of individuality, and parental involvement?
2. The problem that societal expectations are only one factor influencing the education of our children.
3. And the final observation that not only do societal expectations influence education but that education influences societal expectations.

I would impress upon you, however, that of all the issues I have raised the most important seems to me the question of pluralism. As we see the endless educational arguments and the relative inefficiencies and the apparent injustices and inconsistencies that surround and permeate our society and our systems of education we sometimes yearn for a more efficient approach.

But as Winston Churchill said in the House of Commons, November 11, 1947:

> Many forms of government have been tried and will be tried in this world of sin and woe. No one pretends that democracy is perfect or all-wise. Indeed, it has been said that democracy is the worst form of Government except for all those other forms of government that have been tried from time to time.

I'll admit that I have often said to myself, 'if only I were Tsar of Education . . .'. But a disturbing other thought always ends that daydream. What if somebody *else* were made Tsar of Education? I'll live with the muddle.

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THE SIZE AND SCALE — WHAT IS EXPECTED

J.G. OWEN

The sub-title is 'How do you know you are getting there?' To answer, you need to know about the subsidiary questions. Are you doing what the government wants? Are you doing what the economy needs? Are you doing what people expect? These are often posed by people outside education in a fairly general way. But you can answer them only in quite specific terms. And you also need to be precise about who is answering.

If it is a school which responds, question number one cannot be answered. Schools, despite what we may say about consensus, find it difficult to be corporate and to give whole, direct answers. And I doubt whether governments, anywhere, express themselves in sufficient detail for schools to be able to assess their responses clearly. Perhaps the answer must rest with inspectors or with other assessors who can interpret the plans of governments in terms of daily practices as well as of policies.

The second question, about the economy, may be straightforward. To define what the economy needs from education is, if we are feeling hopeful, a short-term business. We think about manpower planning and about the reduction of unemployment. The question can be expanded into an enquiry about vocational and prevocational training, about the linking of general education with jobs and about qualifications which are necessary and/or acceptable to commerce and industry. But the economic question may not, of course, be a short term matter at all. It will certainly take many years to adjust our traditions in order to re-position education in a new economic system. And even in the short run, only those who can see both ends of the connection between education and work can answer with thought and with accuracy. I am thinking in Australia about Dr McKinnon's report in 1980 (*Schooling for 15 and 16 year olds*), about the transition education programmes and about Professor Karmel's appeal, also in 1980, for some blending of concurrent schooling and part-time employment and, in England, about the Youth Training Scheme and the New Training Initiative of the Manpower Services Commission.

To come to the third question, about what it is that people expect, this too, schools can answer and again because the question can be rendered into terms they are familiar with. The disadvantage, of course, is that the terms and the words with which a school is familiar tend not only to be regarded as jargon by the outsider but also as matters which are almost too well-known to the insider. They fail to attract the insider's attention because they have both lost their freshness of meaning and have entered into the category of things which are already being done.

An example of this last point comes out when you rattle through this kind of statement:

Schools are responsible, with parents and families, for making sure that pupils

(i) acquire knowledge and skill;

(ii) appreciate human achievement;

(iii) acquire an understanding of an individual's place in the world;

(iv) learn tolerance towards others;

(v) develop personal qualities through an understanding of emotion, intellect and spirit;

(vi) are prepared for adult life at home and work, as people who are independent and cooperative.

This list is not likely to be regarded as politically inclined. It does not reflect any one ideology over others. A government of any colour can say things like these. When it does, its remoteness gives schools a reason for not taking very much trouble to render it into plans, policies and practice. When a smaller unit of control, or of government, or of some other official initiative which is nearer to schools makes the same statement, and when that unit is meant to be responsive to local electorates and taxpayers (such as a local education authority in England), the business of rendering it into workable ideas in itself becomes more pressing. It is equally urgent to translate workable ideas into practice which not only appears to succeed but which also can be assessed, measured and judged.

The type of statement which I have quoted is part of the working life of schools in many parts of the world. In England, at the level of national government, expectations have been expressed in rather large and remote terms (D.E.S., 1981). Local education authorities have been told to get on with it and to issue a curriculum statement, to make it mandatory for schools to follow it, and to report back to central government within a fixed period of time.

The only way we can get down to the practical level of action and assessment in the United Kingdom is by using not only the 104 local education authorities but also the individual bodies of governors for each primary and secondary school. About two thirds of each set of governors are politically appointed, and a third by parents and teachers. The political appointments are not, I hasten to add, very political in terms of party ideology and affinity at all. It is the machinery of appointment which is political. What it means is that anything between nine and eighteen lay people (depending on the size of the school) meet at least three times a year (and sometimes as often as eight or nine times), have to know about the precise expectations (or as precise as they can get) of government and of the local authority and have to make sure they understand things well enough to be able to know whether what is expected is actually being delivered by the school they are attached to.

I should add that there have been governors in British schools since the mid-nineteenth century. They survived, often as something of a joke, until the mid 1970s, when first a national report (D.E.S., 1977) and then legislation (in 1980) required them to have a broader representation and to have fuller powers. They are not a perfect instrument but they do represent lay opinion in a more or less balanced way. They need to be well-informed, and this is being done.

In one sense, then, society expressed its expectations. Those were processed through part of the education machine and were re-expressed in language to which schools could respond. It goes without saying that the level and quality of response depends on the importance which is attached to it. It is not a matter of letting your eyes slide over the words because they have a familiar ring. And we must not automatically assume that they have the same meaning, even if they are the same words as those used in 1902, or when we were at college or if they are the words which always seem to be used by people who are distant from the classroom. If we have to get the meaning translated into terms of school organisation and policy and then into classroom practice, we need to work out what the phrases actually mean today.

To look at two or three of the six requirements which I have quoted, the first is straightforward. Schools and teachers generally make the acquisition of knowledge and skill their prime business. The process has a shape and the outcome can be measured. The second is less easy: pupils have to appreciate human achievement. Does this mean in terms which are historical, contemporary, cultural, scientific, in sport, in endurance, for good reasons or bad? The questions can be subdivided many times. But the outcome is relatively simple: a child must show an awareness of

achievement which is broad enough to transcend the limits of football, popular music and today's headlines.

What about acquiring an understanding of an individual's place in the world? How can children be taught to respect each other and to recognise the values of individualism and of minorities? Is it something they can grasp in mathematics and science? Yes, if they are led to understand the privacy of scholarship and the loneliness of research or discovery. Should it be confined to the humanities? No, since there the idea of individualism will risk being treated, as a matter of teaching, in a softer narrative style which neither impresses deeply nor remains long in the memory.

As one works through any list, two points are very obvious: expectations which are defined whether in curricular or in extra-curricular terms do not rely on the school alone. There is not much chance (but there is at least some) of a school teaching someone to be considerate if in his or her home little is ever done which shows any considerateness between adults, between adults and children or between children themselves. Equally, one might fear that a school has a virtually impossible job in promoting the values of being considerate if, for instance, highly popular television programmes (in England, the worst example at present is that of a school series called *Grange Hill*) actually seem to glamorise selfishness and violence among teenagers.

However difficult the job is of saying whether or how an expectation is being met, it has to be done. For a teacher to pit himself or herself against the weight of popular media is not impossible. But what happens if the task of translating an expectation into action (and into action which is meant to produce an assessable result) is difficult for a teacher to grasp at the conceptual level as well as in practice? In other words, if we expect teachers to make sure that, to quote again, pupils develop personal qualities through an understanding of emotion, intellect and spirit it is the teacher who first has to understand his or her own emotion, intellect and spirit. Even if it sounds impossibly difficult, the right avenue has to be found through a subject or, more likely, through a range of subjects and of activities which are outside the subject curriculum. The teacher of mathematics has to help the child to understand what the intellect is. Teachers of the expressive arts have to add to the meaning of emotion. And every teacher, whatever the specialisation, has to achieve a small understanding of the spirit.

Impossible. Just think of some of those classes: dull, inert, resistant to knowledge, hostile towards education. Do we give up? Do we say that that kind of expectation is all right for some people but not for everyone? To try to make exceptions means that some of the expectations which society or government or the local community entertains for education are not universal. But mass education is intended to be universal, in what it offers, provides and yields. We cannot say yes, this is what we expect education to do, but only for four fifths of those who attend school.

The alternative is to leave out any kind of expectation which everyone cannot live up to. Cries of levelling-down and of lowest-common-denominatorism will be heard. And the message will emerge indirectly that comprehensive schools are anti-academic, or that examinations nowadays are too easy to be failed by anyone. If these voices can be heard but not listened to and if teachers are to get not only their own but also their pupils' emotion, intellect and spirit understood, they need time, reflection, re-training sometimes, and good leadership. Not all of these are available in all schools.

That we ask for universality when all teachers and schools are not equally able to provide what is expected has led to the attempt to find out how things stand across a

broad range of education. In England this is attempted by the Assessment of Performance Unit (D.E.S., 1978). It assesses standards in language, mathematics and science. It attempted to assess social, personal and aesthetic education but was stopped largely by teacher associations who were concerned that the social and economic environment in which individual schools were placed could not be taken into account in a nation-wide sweep. As a result, the Unit may end up in a position comparable to that of the Australian Council for Educational Research in its dogged but limited attempts at statewide and national testing for numeracy and literacy. Perhaps the advocates and the opponents of wide assessment reflect the optimism and the frustration which were bound to be seen in the 1970s, when parts of the education system were belatedly asked to give an account of themselves after a decade of expansion.

However, the main point I am making here is that large aims have to be interpreted in practical ways, that society cannot be asked to make exceptions in what it demands and that education cannot respond by saying that something can be a proper expectation of some people but not of all.

Society's Views and Local Expectations

It is not only people who are remote from schools who put forward rather difficult expectations. A plea which is often voiced relates to behaviour. This strikes nearer home than the example I have already quoted since it is a matter of expecting young people to act in ways which demonstrate that they are growing up as moral human beings. The questions behind the expectation are those of whether young people are developing, as it would be expressed, properly and as individual persons. Is their social development such as to enable them to look after their own families and friends, to cooperate with others, at work and in their social lives, and yet to show individual distinctiveness?

The answer must describe how a school organises the relationship between its formal rules and the day-to-day behaviour of its teachers towards children. It is a question of what is expected by way of considerateness and of putting oneself in other people's shoes. It includes what is expected if repetitive patterns of distributing the labels of success and failure are followed. It means recognising the fact that styles of personal, moral and social education emerge more readily from tutorial work, from residential experience, from imaginative literature and from the tone of a school than from prescription and exhortation. It means that a consistency between the rules of a school and what it informally expects by way of thoughtful behaviour is made known to parents. Above all it means not leaving this aspect of a young person's development to chance.

It is easier to talk about this than to secure agreement between teachers who believe in the value of personal, social, and moral education and those others who believe either that this is a matter of natural and normal behaviour, as they describe it, or that to talk too much about moral development raises questions which impinge on the privacy of teachers' own behaviour.

Other questions emerge: are their employers justified in expecting all teachers to behave in ways which are principled, altruistic and considerate? Is it right to assume that, in contrast, those teachers should be revealed who by inconsiderate, self-centred and unprincipled behaviour damage the ideals of teaching? The answer is bound to be yes — as it ought, too, in the initial training of teachers. That phase does not concern itself explicitly with a teacher's moral standing, and morality is not a matter of professional certification. Further, if we question anyone's moral values, it can be treated as interference in personal rights. But those who speak for teachers as well as those in question and probe before appointing them to jobs in schools are

obliged to have their eyes open, whether they appoint directly to an individual school or indirectly to a pool of teachers.

This, in some ways fairly small, matter has to be viewed against the background of attitudes in society which touch on other issues about which open societies find it difficult to maintain a consistent view. This is clear not only in morals and education but also in the view taken of the rights of ethnic minorities, of the rights of those who are physically or mentally handicapped and of those who suffer economic disadvantage. In ways which are fairly easy to understand, an advanced society's views about these four matters might be assumed to hang together.

But in England, for instance, the view about the integration of ethnic minorities creates difficulties in the choice of the language which is to be the medium of instruction. Mother-tongue education and denominational instruction also represent a continuing difficulty except in the handful of districts where immigrants form the majority of the population. With those who are mentally and physically handicapped, we have difficulty in agreeing about their statutory right to further education beyond the minimum school leaving age. And with the unemployed, we have rules which deprive certain young people of financial welfare benefit if they attend any kind of educational class for more than 15 hours a week and we debar everyone from normal unemployment payments if they are trained or educated for more than 21 hours a week.

When a statistical value is attached to each factor of disadvantage and when clusters are shown in rank order and then related to the quality of education provided in particular localities of England, the results yield much less information and action than seems to emerge from your Schools Commission's Index of Disadvantage and your Disadvantaged School Program. In England in 1982 the Department of Education and Science (D.E.S., 1982) took factors of disadvantage which included single parent families, low socio-economic group families, families in poor housing, large families and low income families.

British attempts have come to very little in the search for correlation between clusters of disadvantage and the capacity to draw benefit from education -- and this is another problem which has beset the Assessment of Performance Unit. But young people stay on in school in any case because there are no jobs to go to rather than because they have drawn such benefit from their earlier education as to allow them to become unusually capable (and willing) to pursue it further.

Here we move from what society thinks and expects to what is demanded as a response to the economic conditions of the time. Before moving on, the point I have been trying to make in this section is that there are diverse matters about which society is bound to have views (private morals and public education, the rights of ethnic minorities, responsibilities towards those who are handicapped, the position of those who are at economic disadvantage) but concerning which it is difficult to formulate consistent expectations. Local feelings in the areas of individual schools are likely to give firmer guidelines. Despite their inconsistencies these can amount to strong pressure on what schools actually do.

The search for clarity is inevitably befogged by questions about individual rights, by public prejudice and by political ideology. Since expectations are not wholly clear, schools have very little chance of satisfying everyone in their responses.

Technical and Higher Education: changing economic expectations

In shaping its policies for continued education and training, every welfare state has to balance the cost of those policies against either the expected growth of the gross national product or, alternatively, against the growth in the cost of social security

benefits for those who are unemployed. The equation creates a certain amount of resentment on the part of an Treasury lobby and it evokes the complaint that if the education system had only handled things properly, unemployment would be lower — because industries would have been able to develop further and faster as a result of drawing on a larger population of people who were appropriately trained and educated.

This is an ignorant complaint if it is blind to factors other than the effects of technological advance. This in itself is the second largest reason for unemployment and deskilling — and even if we turn away for a moment from the implications which arise for the development of industries in countries with low-cost labour, we still have the problems first of adjusting to a society in which the demand for the unskilled labourer and the semi-skilled operative will steadily decrease and second, of adjusting the place of education in a new economic system.

The expression of expectation is vociferous. One side says that trade training must start earlier and must supplant some part of general education. Another says that we must train for 'occupational families' and not for trades. Yet another says that it can or should all be achieved by teaching more about the applications of science and mathematics. The general expectation sometimes appears to be that pure knowledge should take a seat further back. A small part of this reasoning has its origins in the anti-intellectualism which I have briefly mentioned. But the more important part of the argument is that the curriculum and the organisation of education for those in their 'teens must be responsive to change. The effect of that should wash back into the education of younger children and should reach forward in such a way as to blur the boundary between school, the world of technical training and the world of work.

Part of the change is straightforward: the edges between schooling, training and work have been altering their shape for some time. The pre-vocational sector is into its stride. But mainstream training is more or less unmoved. Room is indeed being made for the technologies but the speed with which curriculum development is making itself felt in technical training and education needs to be increased.

The speed of change and the need to live up to other people's expectations are related to each other. Where post-school education is divided into two sectors, as it is in Britain, the lower level (apprentice and technician training) responds quickly to the demand to provide short courses of technical training and of life skill education for the young unemployed. It changes much less quickly in mainstream work connected with, for instance, engineering, the construction industry or business education. In contrast, the higher education sector is moving fast in adapting its mainstream work to the advances of technology (particularly in communications, electronics and engineering). But it is slow in impressing a polytechnic approach upon the school system.

If curriculum development fails to bring about swift change, we must hope that validating bodies will move more quickly in accepting and responding to new degree proposals. (The B. Eng degree is an interesting example in Britain; following the Finniston Report's urgent recommendation that the education and training of engineers should combine the idea of 'formation' with academic and technical education, the validators (in this case the Council for National Academic Awards) took two years to reach a view (Committee of Enquiry, 1980). The National Advisory Board for higher education in the non-university sector took only four months before 9 courses were established.

Further, where there are sectors within sectors, such as the polytechnics and the universities following separate lines of development with different treatment handed out by government — and consequently with different expectations formulated at

the pre-entry school level — then energy is wasted which should be applied to faster reform and development. This is particularly necessary in programme areas where there is high expectation and even demand for adaptation to new economic circumstances.

Here I have been arguing that a fast pace has been set in economic change and in the social expectations which go with it. The boundaries of schooling and training are beginning to disappear. This will affect future expectations about schooling. It will also alter what we expect from traditional, craft-biased technical training. At the same time the gap of understanding between school-cum-training and advanced/higher education may grow wider and may confuse the expectations of the outside world still further. But between types of institutions in higher education the gaps will close — and the main influence will be that of validating bodies rather than of curriculum developers. But as though in self-contradiction the validators will be expected to move fast in an area of work where institutional traditions are dominant and slow-moving.

Conclusion

Expectations are a matter of both rhetoric and reality. Whether we meet people's expectations depends on whether they can be described as part of reality and on whether anyone can assess the outcome.

In this paper I have tried to look at the range, the proximity and the intertwining of the forces of expectation in education. In my second paper I will look at the meeting point between expectation and accountability and also at the way in which resources affect our performance in meeting expectations. The question also has to be asked of how changes in expectation, policy, and practice are fed into the system.

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THE SEARCH FOR EDUCATIONAL QUALITY AND EQUALITY: A U.S. VIEW

A. HARRY PASSOW

I would like to come at the conference theme *Educational Expectations: Promise and Performance* from the point of view of the continuing search for educational quality and equality. While many of my examples will deal with secondary education and schooling, I mean to generalize to all levels of schooling.

In his foreword to James Bryant Conant's study of *The American High School Today* (1959), John Gardner wrote

> The focus of Mr Conant's study is "comprehensive" high school—a particularly American phenomenon . . . It is responsible for educating the boy who will be an atomic scientist and the girl who will marry at eighteen; the prospective captain of a ship and the future captain of industry. It is responsible for educating the bright and the not so bright children with different vocational and professional ambitions and with various motivations. It is responsible, in sum, *for providing good and appropriate education*, both academic and vocational, for all young people within a democratic environment which the American people believe serves the principles they cherish. [Emphasis added]

In his statement of the responsibility of the schools, Gardner sets forth his view of educational expectations—the provision of quality education, good and appropriate education, for all children and youth, with their human similarities and equally human differences. True, the phrase "good and appropriate education" is deceptively simple. For generations, educational expectations and outcomes have been the focus of much debate and often considerable acrimony. No one, of course, is opposed to quality education or to equal educational opportunity providing it is his/her conception of these terms which prevail.

Ninety years ago, the Committee on Secondary School Studies, better known as the Committee of Ten, published a report consisting of the recommendations of bodies of experts in nine subject areas detailing appropriate curricula. The committee firmly asserted that the secondary school program must be designed primarily for students whose formal education would end with the high school but argued firmly that preparation for college was really the best preparation for life. Not only did the committee detail what subjects were to be offered but stated that "every subject which is taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it, no matter what the probable destination of the pupil may be, or at what point his education is to cease". (Committee on Secondary School Studies, 1893: 17).

The Committee of Ten's conception of a quality education was quite clear—while the student could choose from one of four curricula which differed primarily in the number of languages required, the subjects he/she studied were quite explicit in terms of recommended content, number of periods, etc.

The publication of the report of the Committee of Ten is usually described in histories of education as the watershed in secondary education. Beginning in 1890s, the population in secondary schools doubled each year and the pupil diversity increased correspondingly. In the decades since that report, there has been a parade of committees, groups and individuals critical of the purposes and practices in schools, each advocating reforms, some major and some minor. The questions of educational expectations and educational outcomes have been raised continuously.

In 1918, the Commission on the Reorganization of Secondary Education published its report titled, *Cardinal Principles of Secondary Education* which Cremin has described as a shift of such magnitude from the Committee of Ten report that "it was truly Copernican in character." The Commission argued that "secondary education should be determined by the needs of the society to be served, the character of the individuals to be educated, and the knowledge of educational theory and practice available." (Commission on Re-organization of Secondary Education, 1918: 1)

The Commission declared that all education—elementary, secondary and tertiary—should be guided by a clear conception of the meaning of democracy: "Education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends." (*ibid.*: 20) The main objectives of education were to be: health, command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character.

Thus the Commission stressed the preparation of students for social responsibility in a democratic society. Butts (1976) has pointed out that the report changed

> . . . the emphasis in schooling away from the preoccupation with the academic and intellectual disciplines and [broadened] the social role of education almost beyond recognition. The "constants" were now to be thought of in terms of the common social needs and activities required of all individuals rather than subject matter to be mastered; the variations and electives appropriate to differing individuals could be served in connection with vocation and leisure.

Contrasting the report of the Committee of Ten with that of the Commission on Reorganization of Secondary Education, Cremin (1956) has observed:

> Formerly, when the content and purpose of secondary education had been fairly well defined, equal opportunity meant the right of all who might profit from secondary education as so defined to enjoy its benefits. Now, the "given" of the equation was no longer the school with its content and purposes but the children with their backgrounds and needs. Equal opportunity now meant simply the right of all who came to be offered something of value, and it was the school's obligation to offer it.

In Cremin's view, the Cardinal Principles of Education represented a pedagogical revolution:

> The heart of this revolution was a shift in the conception of the school, of what could be and should be its primary goals and responsibilities. From an institution conceived for the few, the high school became an institution conceived for all. From an adjunct to the college, the high school became the pivotal point in the public school system, one which carried forward objectives yet unfinished by the elementary school and opened new vistas leading on to college. And, from an institution restrictively concerned with the intellectual, the high school became an agency with no less a goal than the progressive satisfaction of every individual and social need.

Still another committee, the Committee on the Reorientation of Secondary Education issued a report in 1936 titled, *Issues of Secondary Education*. Among the ten issues raised were these:

> Shall secondary education seek to retain all pupils in school as long as they wish to remain, or shall it transfer them to other agencies when, in the judgment of the school authorities, these agencies promise to serve better the pupils' immediate and probable future needs?
>
> Shall secondary education provide a common curriculum for all, or differentiated offerings?
>
> Shall secondary education include vocational training, or shall it be restricted to general education?

> Shall secondary education present merely organized knowledge, or shall it also assume responsibility for attitudes and ideas?
>
> (Department of Secondary School Principals, 1936: 19)

In a report which followed a year later, the Commission spelled out its views concerning each of the issues in a report titled, *Functions of Secondary Education*. After presenting the pro and con arguments on each of the issues, the Commission presented its own position asserting that secondary education should be universal and not selective.

The Commission urged that the secondary schools provide for all youth, that it broaden its offerings to include as many kinds of educational activities as were required to meet the needs and abilities of its diverse population, that students be retained until they "had mastered the minimal essentials and had had the opportunity to try every practicable type of instruction which it was reasonable to believe could be adapted to [their] needs" (Raubinger, 1969: 134). The educational program was to provide for both integration and differentiation, i.e. an education common to all as well as provisions for individual capacities and interests. Vocational education was to be a part of the program and those students not going on to higher education were to be provided with what Conant later termed "marketable skills". In a position which fanned the issue of quality education, the Commission asserted that it did not believe that a curriculum which used conventional subjects as the categories for organizing school experiences was defensible. It urged that more fundamental categories of organization of learning experiences be developed and used, categories which transcended "conventional subject matter lines, and relate learning to the needs of the learner in a more productive manner". (*ibid.*: 135)

The Commission on the Reorientation of Secondary Education was but one of the many which have addressed the questions of what our schools are for, what should be expected outcomes, and how quality and equality should be provided.

For educational policy purposes, 'equality' has usually been translated as 'equality of educational opportunity' since there is general agreement that the various forces and factors which affect schooling and education prevent the attainment of absolute equality. But, what is attainable realistically? What kinds of equality of educational opportunity can be realized in our schools?

Perhaps the most intensive and extensive discussion of the issue was initiated in the United States in the 1960s, most notably with the passage of Civil Rights Act of 1964, a section of which mandated that a survey be conducted "concerning the lack of equal educational opportunities by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States . . . " James Coleman directed the large scale survey (645,000 pupils in 4,000 public schools) and reported the findings in the multi-volume *Equality of Educational Opportunity* (Coleman, 1966).

In an article discussing the concept of equality of educational opportunity, Coleman pointed out that the concept which prevailed almost from the beginning in the United States had four elements:

(a) Providing a *free* education up to a given level which constituted the principal entry point to the labor force.

(b) Providing a *common curriculum* for all children, regardless of background.

(c) Partly by design and partly because of low population density, providing that children from diverse backgrounds attend the *same school*.

(d) Providing equality within a given *locality*, since local taxes provided the source of support for schools.

(Coleman, 1969: 13)

This conception of equality, including a free education and a common curriculum, is still widely held but, as Coleman pointed out, it has a number of assumptions such as the belief that the availability of free schools eliminates economic sources of inequality of opportunity and that opportunity consists of exposure to a given curriculum, the higher the curriculum, the greater the opportunity. What the *cardinal principles of secondary education* did was to move schools slowly and unequally toward greater diversification of the curriculum through the introduction of offerings for the non-college bound. As Coleman put it:

> Thus the kind of equality of opportunity that emerged from the newly-designed secondary school curriculum was radically different from the elementary-school concept that emerged earlier. The idea inherent in the new secondary school curriculum appears to have been to take as given the diverse occupational paths into which adolescents will go after secondary school and to say (implicitly): there is greater equality of educational opportunity for a boy who is not going to attend college if he has a specially-designed curriculum than if he must take a curriculum designed for college entrance. (*ibid.*: 15)

The dilemma posed by this conception is that it assigns a particular child to a particular curriculum early on. It is one thing to predict that a specific portion of the population is not headed for post-secondary education and another to assign a particular individual to this group. Yet, is ... equal educational opportunity for all to be assigned to the same curriculum regardless of expected future?

Garms, Guthrie and Pierce (1978) have pointed to three different interpretations of equality of educational opportunity. The first and the oldest has been interpreted as equal access to schooling. Provision of free schools was taken to be equal opportunity, but this definition evolved beyond simply access to the notion that each child should be provided with the same minimally adequate services. In practice, this came to mean that the state guaranteed a minimal level of education expenditures and that these resources were then transformed into minimally adequate programs.

A second definition of equal educational opportunity is based on the premise that learners have widely different characteristics and needs which require that school services be tailored to each student's circumstances. Ideally, each student's school-related strengths and weaknesses would be assessed and additional services and resources would be provided those who had specific learning needs. Perhaps this definition is best reflected in those efforts to provide special programs and resources for students who are physically or mentally handicapped and those considered 'disadvantaged'.

In the early 1970s a third definition emerged from policy analysts and social theorists who argued that academic achievement had become crucial to personal success. The new definition proposed that the measure of equality be equal student learning, at least in terms of certain basic or minimum skills. Upon graduating, every student would be able to perform at a specified minimal level in such basic skills areas as reading, mathematics and writing. This third concept—equality of educational outcomes—has sometimes been extended to include the schools' responsibility for 'equal life chance', using resources to assure every normal child on graduation from secondary school an equal opportunity to compete with any other student. Success in achieving this goal could be measured by the degree to which race, socioeconomic status, ethnic origin and similar social measures were no longer predictive of adult income or occupation. The three definitions of equality of educational opportunity are based on equal access, equal educational treatment, and equal educational outcome.

In designing his survey of equality of educational opportunity, Coleman observed that no single concept of equality existed and that there were at least five different types of inequality:

1. . . . inequality may be defined in terms of differences of the community's input to the school, such as per pupil expenditure, school plants, libraries, quality of teachers, and other similar quantities.

2. . . . inequality may be defined in terms of racial composition of the school, following the Supreme Court's decision that segregated schooling is inherently unequal . . . there is inequality of education within a school system so long as the schools within the system have a different racial composition.

3. A third type of inequality would include various intangible characteristics of the school as well as factors directly traceable to the community inputs to the school. These intangibles are such things as teacher morale, teachers' expectations of students, level of interest of the student body in learning, or others . . . [which] may affect the impact of the school upon a given student within it.

4. . . . a fourth type of inequality may be defined in terms of consequences for individuals with equal backgrounds and abilities . . . equality of educational opportunity is equality of results, given the same individual input . . .

5. A fifth type of inequality may be defined in terms of consequences of the school for individuals of unequal backgrounds and abilities. In this definition, equality of educational opportunity is equality of results given *different* individual inputs . . . Such a definition taken in the extreme would imply that educational equality is reached only when the results of schooling (achievement and attitudes) are the same for racial and religious minorities as for the dominant group.

(Coleman, 1969: 19)

Educational equity then has centered on educational inputs, such as resources, teachers, and facilities; on educational treatments, such as curricular and instructional processes; and on educational outcomes, including the effects of schooling. There have been competing conceptions of equity and of equality of educational opportunity which result in "complex issues, fraught with controversy and characterized by widely different philosophical and educational perspectives" (Levin, 1982: 444).

The search for equity goes on at different levels in the United States—federal, state, local and school building. Educators alone are not involved in this search for equity but legislators, courts, and various agencies are having significant impacts. In 1954, the U.S. Supreme Court in a landmark decision which declared racial segregation unconstitutional, affirmed the significance of education as "perhaps the most important function of state and local government" and declared that "where the state has undertaken to provide it, is a right which must be made available to all on equal terms". In the first section or title of the Elementary and Secondary Education Act of 1965, the U.S. Congress declared it to be "the policy of the United States to provide financial assistance . . . to local educational agencies serving areas with concentrations of children from low-income families" and provided billions of dollars for programs designed to "contribute particularly to meeting the special educational needs of educationally deprived children". Congress has mandated an appropriate education for identified handicapped students, for students whose mother tongue is a language other than English and whose education is impeded as a consequence, for nurturing programs of cultural pluralism. The courts have been involved in school finance cases and have ordered a number of states to revise their school funding approaches based on the "equal protection clause" in the U.S. Constitution. The courts have even been called on to rule on the right of illegal alien children to a free public education. There have even been suits by individuals who have maintained that after twelve years of schooling they had not acquired basic literacy skills and that the schools which had awarded them high school diplomas were culpable.

The constitution of the State of New Jersey guarantees that the legislature must "provide for the maintenance and support of a thorough and efficient system of free public schools . . ." In *Robinson v. Cahill*, the court decided that the disparities in

funding and school services present throughout the state constituted a violation and mandated that the legislature redefine "thorough and efficient". After a three-year delay, the legislature passed and the governor signed into law an act which provided for an accountability system for school programs as well as a revised funding system.

In what has become known as "T & E", the legislature adopted a general accountability model which requires that educational goals be developed at both the local and state levels, requiring widespread community involvement in the goals development process. Needs assessments must then be conducted to determine the degree to which both schools and the school districts are achieving these goals. Program development must then follow and the program must then in turn be evaluated. The emphasis in the law is on the basic communication and computational skills, breadth of course offerings, provisions for students with special needs, physical facilities and qualified instructional staff. All local schools and school districts are free to develop their own goals and programs but, because of the state's history of local autonomy in the schools, only the educational process is monitored by the state. Subsequently, the state established minimum standards in the basic communication and computational skills and required that students who did not reach the level of state mastery be provided with remedial instruction until they have mastered these skills. Each school with students below the state mastery level was required to file a "Basic Skills Improvement Plan" along with its annual T & E report. At the same time, the state undertook financial reform which raised the state tax support level and established budget 'caps' on the affluent district expenditures to allow the less affluent districts to catch up. The essence of New Jersey's T & E effort is a requirement that the schools and school districts state more clearly *"what educational results are desired, what the educational plan is to achieve the desired results, and finally what results have been achieved"* (Ogden, 1977: 1).

New Jersey's T & E effort came about as a result of a search for equity in fiscal support and educational services but what has emerged has been an accountability model. Thus, in the search for equality and quality, accountability and minimum competency testing have come to the forefront. Presently, well over thirty states have some form of minimum competency testing, varying with respect to who sets standards, what is assessed, and what constitutes minimum mastery. Basic skills, functional literacy and survival or life skills are the areas most commonly measured under minimum competency programs.

> Basic skills and functional literacy refer to reading, writing, math and their application to routine tasks of the adult world. Survival or life skills may be confined to the routine application of basic skills, or they may be broadened to include a number of objectives. Among them are citizenship, leisure skills, lifelong learning, and attitudes toward school. In Montana, the public identified appreciation of "beauty" and "cooperation" as skills to be assessed. (Baratz, 1980: 59)

Minimal competency testing is one of the latest responses to the continuing public demand for upgrading student achievement. States vary as to the grades at which testing begins, grades at which tests are given, the provisions for retaking the test, and the actions required for students who do not pass. A number of states have implemented competency-based high school graduation programs to insure that students are not functionally illiterate when they leave. A few states use testing as a basis for early school leaving. Some states use competency tests as a basis for promotion at particular grades—in New York City these are known as 'promotion gates'. Most states do not mandate remedial help for students who do not achieve mastery level. Others provide for remediation—some in the regular classroom, others in special classes or summer sessions or individualized instruction.

Cohen and Haney (1980) have questioned the minimum competency testing approach and see the belief that it will substantially reduce inequality—one of the major arguments advanced on its behalf—as seriously flawed. In their view, minimal competency programs "will stigmatize the students who fail to learn, and by implication at least, the schools that fail to teach, even though experience and research strongly suggest that the test instruments are of doubtful quality, and that we are far from being able to remedy the failures thus revealed".

Broudy (1980) has taken a very critical view of the impact of minimum competency testing on the curriculum. For example, he raises such questions as these about the effects:

> (1) To what extent will the minimum competency testing movement decrease the time and attention given to other strands of the curriculum: (a) for all pupils; (b) for some pupils; and (c) which strands are most likely to suffer? (2) Will the tests serve as screening devices to determine the opportunities and requirements in other areas of schooling? (3) If the tests are used to identify a school population that cannot increase its proficiency beyond a given miminimum, should opportunities for further schooling be denied them: (a) in public school systems; (b) in special streams in public school systems; (c) in institutions other than public school systems? (4) If the minimum competency testing program is used to identify a noneducable youth population, will this have an effect on the compulsory school attendance laws now on the books?. . . . (6) To what extent will the movement be used, wittingly or not, to undermine "public" education?

The accountability and minimum competency testing movements have both been supported in the quest for quality education and equality of educational opportunity but both have been challenged. Litigants in the State of Florida are presently awaiting a ruling from a judge as to whether high school diplomas can legally be withheld from students who cannot pass a functional-literacy test designed for eighth graders. The suit was filed in 1978 on behalf of nine black students who allege that the functional literacy test was racially discriminatory. Of approximately 3,000 students who did not pass the test, 80 percent were black. One basic question that both sides have focused on is: Do Florida schools teach the 24 different mathematics and communication skills—all of them at an eighth grade level or lower— that a student must master if he or she is to achieve the 70% score necessary to pass the test?

Still another equity issue has just surfaced—the matter of 'equal' access to computers in education. San Francisco, like many other communities, has been involved in a 20-year old racial desegregation controversy. A news account concerning the litigation reported:

> The December agreement of the two sides and the judge presiding over the case to create a special school for computer training underscored the position of a growing number of educators that access to computers and computer training is further separating education's "haves" from its "have-nots". And some note that the widespread use of the new technology is such a profound development that inequities threaten the basic value of free access to public education. (Euchner, 1983: 1)

A number of surveys indicate that students in less affluent schools have fewer computers available to them and that they receive less sophisticated instruction than their peers in more affluent schools. In schools which have fewer than five percent of the students from families below the poverty level, 44% have computers; in those with more than 25% from low-income families, only 18.3% have computers. Moreover, a survey by the California state education department indicated that students in the poorer school districts who did have access to computers "are still not exposed to the 'higher order' skills that will be necessary to compete in an increasingly service-oriented economy". (*ibid.*: 15) The discrepancy is, of course, even greater with respect to access to home computers on the part of students from

low-income families. As one specialist put it, the availability of computers in the home "'threatens to create a much larger gap' between those whose families have home computers and those whose families do not", (*idem.*) In schools, even when computers are available, there are significant differences in the availability of qualified teachers between the poor schools and the more affluent ones.

In opening the discussion of the conference theme, I have explored some of the aspects of the continuing search for educational equity and quality of education. In the United States, providing good and appropriate education is not a controversial issue in concept but has been at the center of considerable continuing debate in its interpretation. There is general agreement that humans differ and that some of these human differences have significance in terms of education and schooling. Which differences made a difference—with respect to ends and means? What outcomes are appropriately differentiated, if any? Should a common curriculum be provided for all or should the curriculum be differentiated? Which of the various concepts of equality of educational opportunity should be operationalized? Since education and socialization take place in many other settings than the school, does the school have responsibility for mediating those learnings? If so, how?

In the United States, 'society' has many and varied expectations from its schools and these expectations are often conflicting. The schools are called upon to deal with a variety of social, political, economic, and personal problems which may or may not be related to its educational roles and functions, dependent on one's perspectives. Its goals have included broad statements of cognitive and affective growth and development, with functional literacy at the most limited level of goal achievement. There have been significant changes in the fabric of society, in the family structure, in the knowledge explosion, in the new technologies, in the relationships between nations, in communication media which have altered or should have altered our conceptions of what is "good and appropriate" education and how we can realize it? What are the mechanisms for even considering the possibilities of the changes which can be brought about, which must be brought about, in the formal and informal processes of education, schooling and socialization? Most of us are not futurists and yet the situation calls for to behave as futurists—since clearly the future is already present.

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SECTION II:
WHAT SOCIAL GROUPS EXPECT

COMMUNITY EXPECTATIONS AND THE SECONDARY SCHOOL YEARS

C.W. COLLINS

I have been struck by the tone in which public opinion is mentioned. The public is seen as an unfightable entity of some kind, the influence of which on schools we must all learn to accept and do our best with. I would like to challenge the general thinking about the proper way for professionals to view the relationship between public opinion and schooling.

The rise in studies of public opinion about secondary schooling is a phenomenon we need to examine carefully in itself. Why are we suddenly interested in what everyone thinks of high schools? For a good century educators and politicians made policies for public schools without resorting to plebiscites or other careful measures of public opinion. Nor in my twelve years experience as a child in an Adelaide private school, do I recall any discussion about the purposes of schooling and what the public wanted. Yet, since the mid-70s, we have had a spate of such studies directed at employers, parents, school leavers and so on. Why are we suddenly interested in views of 'outsiders', of non-professionals?

I would like to suggest that the interest in what the public in general wants from schools arises in large part because we feel vulnerable. We are attacked first by student dissatisfaction within and second by the press and prominent individuals from without. In addition, we no longer have defence structures that will withstand such attacks.

For many years before the '70s, professionals in schools worked in a relatively sheltered environment. We had a long period of prosperity during which most secondary students could be induced to sit through hours of pretty unexciting seat work by the prospect of a certificate which, we could truthfully say, would have high instrumental value for their lives. Those students who refused to play that game could be eased out to begin life's education through a job.

The orientation of schools towards a bookish ritual and a certificate had an internal logic as long as there were high rewards beyond the school for the average and above average child. Now, however, the labour market for young people is out of kilter with the school system: there are nowhere near enough jobs and we have severe inflation in the educational certification required for the kinds of jobs the average child used to enter. Thus the intrinsic meaninglessness of much school work is revealed, and so is the lack of any real relationship between that school work and the tasks involved in life beyond the school. The hurdle-setting ritual is exposed for what it is. Not surprisingly, therefore, we have major problems of disinterest and resistance from numbers of students in schools.

Attacks from outside on what the school is doing are too well known to require documentation. Some conservative organizations and individuals were, for a while, almost making careers out of discrediting schools after the recession started.

Less obvious is the fact that the major political alliance which once protected the traditional secondary school is now not really in a position to do so. This alliance consisted of a single state university, a single public-school bureaucracy and a small group of elite private schools in each state. Instead of that single state university we developed, during the '60s, a multiplicity of tertiary institutions. Their faculties are far from unanimous about what they want from entering students. Indeed, in many cases they are rivalling each other in attempts to maintain or increase numbers. They are hardly in a position to protect the old bookish school. Further, the gradual demise of public examinations in many states has taken away the basic mechanism by which such protection, such influence over the heart of the curriculum, used to be maintained.

The bureaucracies of the state systems are hardly bulwarks against change either. From the late '60s, the School and Community Movement, an anti-bureaucratic movement backed by influential professionals and parents, raised doubts about the legitimacy of centralized control. The School and Community Movement was not interested in the views of the public in general but in the transfer of power to professionals and parents at the local school level. Their arguments, together with the discomfort of being in the hot seat in an era of school-bashing, have been enough to precipitate the devolution of some responsibility, if not power, out of head office. The curriculum has been the major matter devolved onto the local school: the centrally set curriculum no longer exists in some parts of Australia and only partially remains elsewhere. Central management is refusing to play the role of the guardian of the traditional secondary school. Two of the three members of the old alliance are no longer in line.

Thus, the secondary school is vulnerable to pressures from within and without. It *is* open to scrutiny and not just there and accepted. It *is* relatively unprotected. This is an uncomfortable situation for most professionals because we are accustomed to well defined operational limits and to conformity between schools. We are not accustomed to having to justify what we are doing. Indeed, I would argue that Australian schools have not had to justify themselves since before the First World War and most professional training has not educated teachers in ways which help them think through such justification. Vulnerability is a fact of life.

What has this got to do with our interest in public opinion? A great deal, I think. Public opinion potentially offers us guidelines for curriculum direction. It can be used in a variety of ways to help us in our vulnerable situation. Our instinct to turn to public opinion at the moment is, I would argue, basically sound. Yet for public opinion to be of value to schools we need to think a lot harder both about the nature of such opinion and about how we, as professionals, ought to respond to it. So far our approaches seems all too frequently to have swung between naivety and abuse. We have a lot to learn about responding wisely to outside pressure groups and I would like, in the rest of this paper, to suggest some guidelines for our pilgrimage towards that wisdom. Let me begin by discussing tempting abuses of deliberate studies of public opinion like the expectations studies in which I have been involved.

A major temptation for professionals seeking deliberately to ascertain community expectations is to use public opinion studies as a defence against what I would regard as necessary changes in power structures in schools. Public opinion studies keep one in touch with the grassroots, indeed allow the virtuous glow of feeling that the "community", whatever that is, has been consulted in an age when pressure for better school and community links is stong. But at the same time, this kind of consultation keeps decision making in the same old hands rather than genuinely devolving it out of the bureaucracy and into the safe keeping of the local school community.

There is a major difference, as Leonie Sandercock (1978) has pointed out, between participation through market research and locally based, client participation in decision making. One is compatible with bureaucratic habits while the other requires genuine changes in the power structure. Is it a coincidence that we have all these public opinion studies at a time when we are mouthing the rhetoric of real community power?

The second temptation with such deliberate studies of public opinion is to use them to defend ourselves and to help us feel comfortable with the status quo. One can indeed find in expectations studies evidence of more public support for schools, even for state secondary schools, than one would expect from reading the daily press. And those who know the schools best, parents and others closely associated with

them, give strongest support (See Botsman and Browne (1977) as well as Collins and Hughes (1978)).

Further, such studies show that the major issues raised by the press — the basics and academic standards — are not the areas of concern to those who know schools well. They can, therefore, provide useful ammunition in defence of our professional competence at the school's traditional tasks. However, if we construct and use them honestly, public opinion studies will also reveal major public anxieties. Indeed they raise problems more frequently than they give comfort. An honest survey, honestly analysed, rarely gives grounds only for self-congratulation.

There is also the temptation to construct public opinion surveys in the first place so that questions likely to give the public a chance to express their major concerns are simply omitted and replaced by carefully structured side issues. (This has happened at least once in the A.C.T. to my knowledge.) Both the less-than-honest survey and the less-than-honest use of selected survey results need to be exposed for what they are — propaganda exercises by professionals to support themselves.

Perhaps the most common temptation, however, applies equally to unplanned as well as planned exposure to public opinion and it is to swing to the opposite extreme from the defence of the status quo. Schools and school systems which felt battered from within by student pressure and from without by an ungrateful public have often rushed into action to rectify what the latest press story or survey claimed to reveal about the schools' failure.

It is not the proper task of the school to simply respond submissively to the demands which any group in society chooses to place on it. The extent to which we have taken on this masochistic role over the last decade is an indication of how weak and vulnerable we have felt, rather than a sign of good schooling. Acting precipitately on the basis of what someone argues is 'public opinion' or 'the community's expectations' is unlikely to be in the best interests of schools and children. Schools in the '70s were buffetted by every wind that blew from powerful sectors of society. This was debilitating for teachers, placed too many disparate small tasks on schools and was not obviously any more helpful to children than the old curriculum. In my view schools need not and ought not to have responded so willingly to the pressures from, for example, certain employer lobby groups during those years. The willingness to give in to pressure, on the grounds that this is what the community wants, also shows a surprising level of naivete about the nature of public opinion. Let me expand on this naivete point and, through it, return to the broader issue.

It is naive, first, to believe that there is public agreement on directions for change. The press has a series of standard ways of making the views of one or two sound like the views of many. But schools are foolish if they believe such kite flying. Careful analysis of public opinion shows that there is no clear consensus in society about directions for change in secondary schooling. There is surprisingly strong agreement about what is wrong with secondary schools but a great variety of views on what should be done about it. Some prominent academics want a greater emphasis on traditional academic disciplines and standards; some employers want to orient secondary schools towards the basics, practical skills and respectful attitudes; while many parents want schools to become more concerned with helping students to grow and develop into mature persons. Students themselves, on average, have slightly different priorities from parents and very different ones from well-publicised academics and industrial lobby groups. Studies of those closest to schools — parents, students, recent school leavers — suggest directions for change which might be possible with good-will, time and a great deal of school-client discussions. At the moment, however, there is no agreement which a clever politician could not undo in a few choice sentences. Those who expect public opinion to be uni-directional and to give a clear blue-print for change are fooling themselves.

Another reason why it seems naive to act in haste in response to 'public opinion' is that it shows an over-innocent faith in the commitment of people in action to the ideals they profess in words. We have clear evidence over the last eight years that the schools' clients are much more complex persons than such faith allows for. During the very years when school client studies have been indicating dissatisfaction with the bookish secondary curriculum, we have had something of a flight by parents from the level of reform already operating in public schools to private schools offering the very traditional bookish, academic approach which, in pencil and paper studies, they do not want. In tight economic times, people are unlikely to offer their children up to an experimental secondary curriculum when they see the old one as better understood by employers and more acceptable to the few remaining choosy, elite and conservative professional university faculties like medicine and law. We must not confuse people's best hopes for an ideal school with their willingness to support such a school in the real world of today.

Being naive about public opinion in the above ways — envisaging it as a potentially unanimous guiding voice — also puts us off facing several crucial tasks. One of those is a political task. By pretending that people know unambiguously what they want and that what one wants all will want, we have avoided the important task for us as professionals of thinking through who in the community has the right to major influence in schools. I believe that schools are there to look after the best interests of children, to protect their right to know and their right to full lives. If necessary the guardians of the school may have to protect those rights against pressure from those groups in society with lesser goals in view for schools. If we care about children we cannot allow everyone the right to use the school curriculum for their own ends. Who in the community is most likely to care that children develop fully and to join us as good guardians of schools? We must face this question in a realistic way if we are both to improve the secondary school and at the same time decrease its vulnerability to less-than-altruistic pressures.

One of the most important things I have learned from studying the history of American schools is that the way one structures access to influence over schools and who obtains that influence matters a great deal. America has a 350-year history of community involvement in schools and we have much to learn from it. American schools, about 90 years ago, began consolidating small urban school districts run by boards of citizens into whole city systems run by boards of citizens. These new structures had, and continue to have, very clear outcomes when compared with the old structures, in terms of who, in the public, influences school policies. Such city-wide structures favour the well-organized and powerful in society — the middle-class with city-wide constituencies in general and the business community (chambers of manufacturers and commerce) in particular. The same structures have made minority groups and ordinary parents without connections and concerned about their child in a local school, relatively helpless. The new structures had clear effects on the curriculum. Conservatives like Arthur Bestor in the 1940s and radicals like Samuel Bowles and Herbert Gintis in the 1970s would all agree, for example, that the general paradigm governing American urban schools in the 20th century has been one which sees children as raw materials to be moulded and shaped (gently and without traumatic damage) to fit into existing imperfect American business and societal structures. There has been a slide away from intellectual ends, the discipline of understanding, and towards 'social integration' to use Passow's term, or 'social control', to use a more radical one.

To return to Australia, it is naive to think that we are going to please all groups in society or accommodate all demands on schools. As the old alliance between university and bureaucracy has broken down (and I think that is a good thing), we need now to make conscious decisions about who our new allies will be and how we shall organize ourselves to ensure the best influences over schools rather than the

influence of any well-organized group which cannot resist rushing into a power vacuum. Who is most likely to have the best interests of children at heart and at the same time, as a group, can wield strong political clout? Go back to your state parents and citizens organizations and ask them!

Turning to parents as allies is not easy for many teachers, particularly those brought up in state school traditions. What is involved is an end to the old mentality which envisaged schools as rescuing children from the lesser culture and language of their homes. Parents were precisely the people against which the old alliance in Australia was used. We need a rapid development in understanding by teachers of the educational futility of keeping parents out and the political and educational importance of building good alliances with them at the local school level. They are the people with a basic and absolute right to influence the school curriculum, the people most likely to keep in mind the genuine interests of children and the people who together can make a strong political force. It is primarily with parents that we should discuss school aims and clarify mutual expectations, seeking, in a professional manner, to persuade when we honestly think they are on the wrong track, but always genuinely listening, respecting and working alongside them, encouraging them to be, along with teachers, the schools' guardians.

This brings me to the other task we are avoiding by being naive about public opinion. We are tempted to treat it globally because to go beyond denying its validity on the one hand or rushing to implement it on the other demands of us, as professionals, a lot of hard thinking about the proper purposes of schooling. We are not used to such fundamental thinking. For several generations we have been locked into an instrumental view of our task and into the comfortable assumption that the curriculum handed down from on high could be, indeed was, value free. We were told to think about the now, not about the range of possible aims and their links to the social context of schooling. We learned that lesson too well and now find it both scary and somehow improper to think beyond the how to the broader issues. It is therefore tempting to allow 'public opinion' to do that thinking for us, to delude ourselves either that what we are now doing is still valid or that outside events or persons are going to tell us what to do.

One is struck by such delusions in reading professional curriculum documents such as the latest ACT Green Paper on curriculum. The document fails utterly to argue a fundamental position about what schools are for. Instead it talks vaguely about rapid societal change and quotes several disparate sources (unacknowledged) generally implying that powers beyond the school are forcing a variety of inevitable curricular directions. What we needed instead was some intelligent professional input into the curricular debate. Professionals have a duty to think harder and more carefully about schooling than other sectors of society. No one else knows more than you do and you should not allow the schools to simply drift with the tide and the storms. If they are so drifting, there is nothing inevitable about it. They are drifting because we have chosen to let them, failed to develop good aims for schools in the current frightening world, failed to develop those aims in dialogue with others who care about the next generation.

In order to convince you that public opinion won't relieve educators of their difficult thinking task, let me sketch out, in broad terms, what one finds underlying community expectations of secondary schools in Australia. One finds the intertwining of five historic traditions of thinking about what schools are for. The first public opinion study with which I was involved (Collins and Hughes, 1978) picked these traditions up rather tentatively. They have become clearer in my own understanding of what the public is saying since that time. These five traditions are the Academic, the Social Control, the Industrial, the Personal Development and the Social Reconstruction traditions.

The Academic tradition is familiar to you — schools are there to introduce children to disciplines which universities take seriously (or to those disciplines which universities took seriously at the turn of the century).

I have already mentioned the Social Control tradition. Readers of radical educational literature of the last ten years will recognise it. Schools are there to teach children that whatever bad things happen to them in life are their own fault (low I.Q., poor home background) and that they should submit to authority without rebellion. Institutionalized children are tamed children. There is a strong element of this tradition, to which we need to be alert, in the desire to get unemployed youth back into schools.

The Industrial traditional is very strong in Australia, perhaps stronger than anywhere else in the Western world. Schooling should lead to jobs. Schools are there to provide the skills which employers want. It is a tradition which has tainted even academic subjects for these tend not to be valued intrinsically for the knowledge and understanding they give, but because they lead to university entrance and high status jobs. It was by inverse logic within the Industrial tradition that schools got blamed for unemployment. Ironically, perhaps unemployment is now helping many to see beyond that view and to see that schooling cannot be built around it alone.

The Personal Development tradition grew slowly during the last century and rapidly in this one. It argues that children, if placed in good environments, grow naturally in their minds and spirits as well as in their bodies. This belief, augmented by Freudian insight and by the science of child development has become a powerful influence over child rearing in homes and schools. Schools are there to provide stimulating learning environments and to foster the development of students as individual persons (the question of ends is usually avoided).

Finally there is the Social Reconstruction tradition, though I don't mean social reconstruction in its strong, propaganda sense. Rather, I mean the tradition that schools are there to teach truth and respect for truth, so that the next generation will be better, stronger, less prejudiced than the last and through the generations we can build a better society and a better world. Schools are there to help students understand themselves, the world and life itself. This view has strong links with public schooling and with some of the best traditions of private schooling (for example, William Godwin's (1971) hesitations in the early 19th century about state involvement in education because he feared that the state would be tempted to use schools for its own ends rather than encourage schools to foster truth).

What does this have to do with professional responsibility and public opinion studies? A great deal I think. We can find all these five historic traditions in what the 'public' says. What one gets from public opinion is a surface manifestation of the relative balance of these traditions in particular groups at particular times under particular media and other influences. Some people live entirely within just one or two of them. For a lot of our history we tried to confine working class education to the Industrial and Social Control traditions and many still see schools in those terms only. Some people, most people probably, are contradictory, thinking in one tradition one day and its opposite the next. Some, like an employer we met, want one tradition for their own children but another for those who will work on the factory floor.

Further, these traditions have a political history and a political life. The Academic tradition has given great advantages to middle class children brought up within the language and thinking rituals required. Pierre Bourdieu (1976) has spent a decade giving us overwhelming evidence of this and the Paris riots of the last few weeks show how right he is. The Industrial and Social Control traditions, too, obviously bestow great benefits on some in society and much lesser benefits to others.

Thus public opinion studies, or the press, may expose the balance of traditions in a particular group today. But I do not see that this tells us what we as professionals ought to do in schools. Rather, I think it is crucial for us to think hard about all five traditions to discard the worst, to recover what is best from all of them and to become politically active in the service of that best. We have an obligation to seize on the good elements in a contradictory hegemony and to try to promote that best, if necessary, against the opposition of those who benefit from a lesser view of schooling and of the rights of all children.

I would like to finish by referring briefly to what I see as the balance of public opinion about secondary schooling at the moment and what that means in terms of actions professionals perhaps should take. This is a *coda* for those of you who want some substantive data rather than a paper of pure argument! For, of course, I don't see public opinion as unimportant. I am concerned rather, that it not be treated indiscriminately but properly weighed by parents and professionals against a clear sense of the best interests of children and that we insiders take responsibility for what we absorb and what we reject.

I have been involved in three studies of community expectations: a study of parents, students and teachers in secondary schools (Collins and Hughes, *Expectations of Secondary Schools*, 1978); a study of their post-school years (tertiary counsellors, workers with unemployed youth, personnel managers in large firms) and of youth who could look back at their secondary schooling across a few years' post-school experience (Collins *et al.*, *Looking Backwards*, 1980); and recently, an A.C.T. study of parents of final year primary school (Collins *et al.*, *Facing the Secondary School Years*, 1983). Two of these studies help us to understand the topography of opinions of 'insiders', those whom I regard as legitimate decision-makers on secondary schools. The *Looking Backwards* study, by contrast, was an attempt to find outsiders whose experiences and reflections might have given them a particular wisdom of value to secondary school decision-makers.

While there is no real agreement about directions for change among those tapped by these studies and others conducted elsewhere, there is a considerable measure of concern about the same aspects of secondary schooling. First, there is widespread concern that too much emphasis is placed on 'bookish knowledge'. Much of the curriculum is experienced by students as irrelevant. Moreover, the emphasis on traditional subjects has had ripple effects across the whole way the school is organized and operates. It affects the status and viability of other subjects no matter how intrinsically valuable they are. It also affects perceptions of students in the institution. Those students who were not academically competent in traditional ways felt themselves to be less valuable and less valued as persons.

The most commonly felt lack in the curriculum is its failure to give practical skills and know-how required for adult life. For most respondents, however, that know-how in itself would not be sufficient to constitute good schooling. They want schools to be involved in the development of persons who have high self esteem, can think clearly, relate comfortably to others and generally have the ability to look after their own interests and cope with life. Indeed the general thrust of studies of the opinions of those close to schools suggests an upsurge in the Personal Development tradition, a new and I think commendable awareness of adolescents as persons at a particular stage in life who need to be helped to find out who they are, and how they might grow towards a responsible, satisfying life in difficult times. Schooling was seen as currently having little to do with these urgent matters.

Only a small group placed this general concern for personal development and practical skills in a broader context. Those who did, argued the case which has been put so well in the Schools Commission (1980) document *Schooling for 15-16 year*

olds. They argued for at least some of the secondary years being detached from tertiary study and treated as years of initiation into adult life. A good secondary education would provide practical skills and help with personal development. These were very important. But it would not stop there. These people felt strongly, and rightly so I think, about the Social Reconstruction tradition. Adult life involves taking part in a democratic system. Students don't just need the basics, or to have self confidence and skills in looking after their own immediate interests. They need to understand social issues and to have some perspectives on the society in which they live. They need to be able to participate rather than simply be acquiescent plebians as self-serving employees in structures they don't understand.

The views we have tapped then fall rather into three groups. First, there are those who remain within a fairly simple Industrial plus Social Control tradition. Second, we have those who accept aspects of these two traditions but add and emphasize the Personal Development one. And third, there are those who accept aspects of all these three but add and emphasize the 'truth', or Social Reconstruction, tradition. The Academic tradition hardly gets mentioned in this ideal world, when you ask people what they would really like in a secondary school curriculum; but it is, of course, very influential in real decisions by parents about their children's schooling.

I think one can discern, in the mix of what people say they really want from secondary schools, the basis for dialogue and constructive change. There is common agreement, in theory at least, that schools need to be less bookish and more connected with the realities of adult life and with practical matters. This common thread is expressed very simply by some, seen within a rather broader yet individualistic context by others, and viewed in a total societal context by others yet again. This suggests that the wise place to start rethinking the secondary curriculum is around the 'real life' thread.

Further, a narrow anti-intellectualism is not the majority view. Most people have moved beyond the confines of the Industrial and Social Control traditions to a concern about the Personal Development of children (their own children at least). The majority view has moved to a kind of Progressivism in which there is a considerable focus upon students as developing individual persons with intellectual and social needs and a need to be helped to develop good values and personal strength. There is much merit in this and a great deal for schools to build on.

While changing the curriculum is going to be difficult and take considerable time, thought and dialogue, there is another simpler place at which we can begin changing secondary schools right now: we can change the school environment into one which is caring of adolescents, in which staff are able to get to know and take an interest in individual students. Almost all respondents in public opinion studies have been concerned about the school as a place in which adolescents must spend their growing up years. There would be no opposition to changes in school power and responsibility structures and pastoral care structures provided that order and good work orientations are maintained. These would be no opposition, either, to changing structures so that parents are properly involved. Solving the structural problems of schools, changing these *internal* traditions is a place we can make immediate improvements and is possibly a prerequisite for formal curricular changes anyway.

Let me end by pointing to another area where change is possible and necessary and which might be a particularly appropriate area of work for this College. There is an urgent need for dialogue between schools and élite faculties of universities and CAEs about the basis for admission to those faculties. The current arrangements encourage 'bookish' approaches in schools. They force parents to be ambivalent about any curricular change which they quite clearly see as intrinsically better but perhaps instrumentally worse, affecting a child's chances to 'get to the top'. Moreover, the

traditional curriculum and its links to elite faculties favours children from certain home backgrounds and schools, not necessarily those who would make the best professionals.

If we could break the current secondary-elite faculty link it would be easier to create an intellectually better curriculum, one that is genuinely concerned with the development of intelligent, knowledgeable persons rather than with bookish rituals. We could also work for a just curriculum for all children and one that connects with all their realities, not just with the background of a few. This is a challenge worthy of the Australian College of Education, the most appropriate forum in Australia for dialogue between educational professionals at all levels and from all education sectors.

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GRADING SCHOOLS — WHAT DO WE EXPECT AND HOW DO THEY RATE?

NEIL BAUMGART AND COLIN POWER

"It is the common complaint of many, that the learning which is now taught in Schooles, is a thing too tedious, and long in regard of the shortness of life, too laborious for common capacities, too narrow in respect of the amplitude of things, and in regard of the subtlety, and solidity of their truth many ways defective. And the wiser sort have noted, that it is not answerable to the proposed end; seldom attaining to any substantial uses of life, but rather ending in the smoke of opinionative brawlings, and contentions: which that they are not idle sayings and surmises, but even real defects, we must first declare, before we undertake to seek remedies to redress them. We must, I say, make it good, that the studies of learning, as they are now managed, and commonly taught in Schooles, are not well proportioned."

Comenius (1642), p.5

Introduction

Societies have within them many agents performing educative roles. Families, several forms of media, the world of work, the arts and peer and community groups based on professional, religious, social, political and leisure-based affiliations all perform influential educative functions. However, societies have seen fit to maintain a complex structure of schools and other specialised institutions to carry out the substantial part of educating new generations and more recently, to provide continuing education for current generations. This enterprise is a vast one and the cost is considerable. On a world-wide basis, something approaching five percent of gross national product is spent on education and by the early 1980s, Australia was spending close to seven percent of its gross domestic product on education.

In spite of this investment in, and commitment to, formal education, schools are sometimes perceived to endorse values which conflict with those held by some groups in the society or to produce graduates whose knowledge, attitudes and skills are dysfunctional for the needs of the society. The quotation from Comenius in the 17th Century is a reminder of how long schools have been the subject of criticism; those of us in the profession need no reminding of the frequency of criticism levelled at contemporary schooling through the media.

Criticism can, of course, be constructive. If it serves to jolt complacency, to encourage quality, to prompt self-appraisal and to promote future planning, then it can have positive benefits. On the other hand, *systematic* evaluation of the performance of schools, and particularly that which provides information to facilitate improvement, would seem preferable to casual criticism triggered by isolated incidents or instigated by sectional interests. Similarly, discussion of public opinions on the role of schools and on the extent to which schools are fulfilling expectations needs to be broadly based on available evidence rather than narrowly extrapolated from the views of articulate sub-groups.

The purpose of this paper is to present a broad analysis of how society grades its schools and to place this in historical perspective. Attention will be drawn to the differing views held by different sub-groups and an attempt will be made to 'explain' this lack of consensus. Similarly, where public opinions about schools have changed over time, an attempt will be made to relate the changes to differences in the structure and function of schooling over time. Finally, using these relationships as a basis for projection, the paper will provide a scenario on the public view of schools in the future.

Inevitably, any analysis which includes historical perspectives and which attempts to describe futures needs to make assumptions about the nature of social change. Although we would not wish to assign labels to our approach, we believe readers will have little difficulty in identifying our approach to change as a neo-evolutionary one rather than a conflict one. Certainly, we believe schools will change and change rapidly in response to, and in harmony with, other social, political and economic changes. We consider that this can be accomplished with careful planning, with continuous monitoring and with some structural change. It follows that our views are likely to be less dramatic and less newsworthy than those of vocal critics of the present system who see schools at the point of breakdown and who call for a complete restructuring as the way around a perceived impasse.

What Does the Public Expect of its Schools for How Does it Grade Them?

Since the mid-1970s there have been at least ten major studies conducted in Australia on opinions of different groups about our schools. Significantly, the Australian College of Education has played an active role in three of these concerned with public opinions about schools in Queensland (Botsman and Browne, 1978), in South Australia (Dunne, 1978) and in New South Wales (Baumgart *et al.*, 1979). In *Expectations of Secondary Schools*, Collins and Hughes (1978) focused on the views of people in the immediate school community — teachers, parents and students. A study by Campbell and Robinson (1979) surveyed expectations of schools in a nation-wide sample which tapped people in business and unionists in addition to teachers, parents and students. Other studies have focused on school leavers and those associated with them during this difficult period of transition. Examples include the studies by Wright and Headlam (1976), Anderson and Steinle (1978), Williams and Priest (1978) and Collins *et al.*, (1980). Finally, some studies using data from the IEA surveys (for example, Power (1983)) have noted the level of satisfaction expressed by students still at secondary school with their school experiences and with teachers.

The results of this research effort have been fairly widely disseminated in conferences and in the literature and evaluated in reviews (for example, Mason (1979) and Collins and Hughes (1982)). Hence, no attempt is made here to provide a comprehensive summary of the research. Rather, we restrict our comments to some global impressions.

A number of research studies referred to above used questionnaires or interviews with a large number of items but sought to introduce some parsimony by reducing the set of numerous goals or expectations to a few crucial orientations or dimensions. Thus Collins and Hughes (1978) identified five orientations — academic, practical, personal autonomy, social awareness and socialisation — although factor analyses required modification of the list for some sub-groups. Baumgart *et al.* (1979), although using essentially the same items used in the previous Queensland and South Australian surveys, conceptually reduced the item set to five dimensions — basic skills, personal development, social competence, practical skills and cultural interests. However, on empirical grounds, the last three showed considerable overlap. Although several differences in terminology and definition are evident across the studies, there is sufficient commonality in the dimensions identified to permit a global summary of some of the major aspects.

In general, then, studies on the opinions of schools have revealed a number of global features:

(a) given the diversity of samples, instruments, and techniques employed, a relatively high degree of consensus has emerged from the surveys.

(b) when grading the 'school known best', the public has expressed an overall high level of satisfaction. This was particularly so for non-government schools.

(c) students, parents and teachers have all expressed highest priority for 'basics' but only moderate priority for academic subjects. High priority has also been assigned to personal and social development and to practical skills for everyday living.

(d) as compared with parents and students, teachers have tended to give more emphasis to personal development and relatively less to practical and vocational skills.

(e) when goal perceptions are compared with perceived achievements of schools, most discrepancy occurs for the practical skills and least discrepancy occurs for academic work.

(f) a significant number of school leavers have reported a feeling of alienation at school stemming from the perception that academic achievement is regarded more highly than their worth as persons.

(g) in those studies which have considered separately the views of employers (for example, Campbell and Robinson (1979) and Williams and Priest (1978)), this group has not been found to differ markedly from the overall pattern of results.

(h) "Contrary to some claims . . . there is evidence that high school students in Australia have become more satisfied and less alienated than their counterparts of a decade ago." (Power, 1983: 95).

This summary is somewhat at variance with the opinions about schools which frequently attract media attention. Some such views are highly critical of schools and of teachers. Of course, we would not content that everything in the school garden is rosy nor would we deny that some major changes are desirable and long overdue. However, in appraising opinions about schools, we should not be tempted to accept the views of articulate sub-groups as representing public opinion. Therein lies one of the values of conducting large scale surveys of public opinion. A further danger, of course, is that sensational criticism not only attracts widespread attention but can also provide a basis for a self-fulfilling prophecy. To guard against this, professional educators need to communicate effectively to the public the goals of schools, the methods being used to achieve them and the degree of success in this.

We should hasten to point out that it is not our intention to reject out of hand, or even to dismiss lightly, criticisms of schools which emanate from particular sub-groups. Rather, we would argue that an informed public needs to be able to separate out the expectations which sub-groups or people hold for schools from the gradings or evaluations made by any sub-groups in the light of the expectations held because in this way it will frequently be possible to explain why different sub-groups value schools differently.

Of course, this is only echoing a sound principle of evaluation — that the criteria on which judgments are based should be made explicit. However, it is a principle which was reinforced for us through involvement in the evaluation of the 1980 *Australian Studies in Student Performance* (ASSP) Project (Power *et al.*, 1982). Recalling the gross judgments made and conclusions drawn at the time the results of the 1975 national testing in literacy and numeracy were published, the evaluation team in 1980 decided to seek from different sub-groups the expectations held for ASSP at the time the project was initiated. It was considered that this would permit a more realistic evaluation of reactions to subsequent publication of results of the testing. Views were sought from a large range of groups on their understanding of the project and on their opinions on what it might achieve. The responses were most diverse:

> . . . teachers' unions and . . . parent groups indicated most opposition to the project . . . (because) ASSP was not really geared to provide assistance to students and teachers . . . these groups argued for other forms of evaluation . . . (and) drew attention to broader curriculum objectives.
>
> . . . a number of professional associations were clearly divided in their . . . expectations . . . (and) some saw value in national monitoring, others were sceptical.
>
> . . . at the opposite end of the continuum, employer groups and some community groups tended to favour national assessment . . . arguments here usually referred to 'standards', to the need for system accountability and the desirability of monitoring to achieve it.
>
> (Power *et al.*, 1982: 50-1)

This range of expectations for the ASSP project parallels the spectrum of views held by different groups in the community for the role of schools. Unfortunately, the expectations held for schooling have sometimes been unrealistic. Hughes (1983) claims that education has suffered in terms of government support when schools have not been able to fulfil a number of unreal claims, both positive and negative. He cites as examples of unreal positive claims, attempts to develop racial harmony and equity and attempts to redress inequality of opportunity. Examples of unreal negative claims given by Hughes include the claim that appropriate education can prevent unemployment and that 'schools once succeeded at a much higher level in the teaching of basic skills."

Many criticisms of schools, then, may stem from holding expectations which are unrealistic. This is not to deny the good intentions of the critics. On the other hand, there are obvious dangers in diluting our expectations for schooling or in relaxing demands for quality in education. If the public comes to expect less from its schools, it will also expect to contribute less to their functioning and the feeling of disillusionment will grow. The time is ripe for an educational 'summit' and an attempt to achieve reasonable consensus on what Hughes (1983) describes as a need for "a rigorous re-evaluation of the capacity of schools to make an appropriate contribution to the individuals they teach, and, thus, to society more generally." A similar view is expressed by Goodlad (1979) who argues that schools can take on too much and that there is a need to clarify what schools can and should be able to achieve.

How Have Opinions and Expectations Changed?

Historically, there was a time when very close relationships existed between communities and their schools. Before schooling was compulsory and before there was system-wide provision of education, schools were formed through community need and initiative and fostered through local support and provision. In this context, the community enjoyed first-hand knowledge of what happened in schools and exercised considerable control over the provision and maintenance of facilities, the allocation of other resources and the content of curricula.

Then as schooling became the responsibility of a wider authority, be it Church or State, the 'systems' of schooling introduced their own control mechanisms. These are most obvious in the elaborate provisions of an inspectorial system and in the use of public examinations and the standardised certification of students. While such mechanisms were in place, the public trust of schools resided in the ability of these mechanisms to hold schools and teachers accountable.

We need hardly rehearse the reasons for the decline in the operation of such system-wide monitoring and the growth of professionalism. However, as that professionalism carried through to the reforms of the 1970s — the decline in public examinations; school based curriculum development, decentralisation, shared decision-making; school assessments — so the demands for greater public account-

ability of schools and teachers increased. Of course, there were other confounding influences. We noted above that some of the expectations held for schools were not realistic. The down-turn in the economy, the rise of unemployment and youth unemployment in particular, changing social mores and the competition between education and expanding social welfare schemes for scarce resources all serve to complicate any explanation.

There is a tendency when times are hard to seek out scape-goats. Satisfaction with schools depends on a match between community expectations and perceptions of what schools are achieving. Following relatively dramatic changes in economic and social conditions, new and unrealistic demands may be placed on schools resulting in a mismatch between expectations and perceived achievements. We are inclined to think that schools have suffered appreciably from such thinking in recent years. If demands for greater accountability were principally a function of greater school and teacher autonomy, then we would expect to see much greater accountability demands on the primary and tertiary sectors. While it is true that both of these sectors have experienced some increase in demand for accountability, it is the secondary sector which has come under most scrutiny. Crittenden (1981) has described an 'identity crisis in secondary education', the Schools Commission (1980) report on *Schooling for 15- and 16-Year-Olds* has called for a major restructuring at this level and Collins and Hughes (1982) in *Where Junior Secondary Schools are Heading* refer to the need for 'urgent change' because of 'curriculum failure on a grand scale' and 'organisation failure'. It is surely no coincidence that the secondary sector is the principal interface with the world of work. The problems of the society and those of the schools thus become closely intertwined and it must not be expected that attempted solutions focused on the school alone will be effective unless parallel support structures exist in the wider community context. No doubt the creation of a Department of Education and Youth Affairs is recognition of just this.

What Should the Public Know About its Schools?

In the first place, it might be noted that, considering the centrality of schooling in the community, the public are not well informed about schools. The accompanying Table 1 shows the distribution of responses to the question "How much do you know about schools?" which was asked in each of the three States in which the College-sponsored survey of public opinions was conducted.

Table 1. Responses to the Question "How much do you know about schools?"

	Claimed knowledge (% responses)			
State	*A lot*	*A fair amount*	*Very little*	*Nothing*
NSW (N=1334) weighted sample	13.3	44.8	35.5	6.4
Queensland (N=948)	10.2	43.6	42.5	3.7
South Australia (N=1183)	8.1	40.9	44.8	6.1

As might be expected, these surveys also revealed that it was people who had greatest personal contact with schools, either through their own level of schooling or through having children at school, who professed most knowledge of schools. In addition, when asked about the sources of information on schools, those sources

stemming from personal contact (children, school staff, school newsletters and friends) tended to overshadow public media sources. We note these aspects here for they are relevant to our contention in the final section.

Relatively little knowledge of schools should not be interpreted as public apathy, nor should the public be considered unaware on educational issues. The experiences of interviewers in the surveys of public opinions about schools revealed, for the most part, an interest in schools and a ready willingness to discuss them. It was only in inner-metropolitan areas where a stranger knocking at the door can readily arouse suspicion that significant reluctance to respond was encountered. Mason (1979) argued that there was a heightened awareness of educational issues in the community and she advanced seven major changes occurring in Australia since World War II which had contributed to this. But the issues go beyond the interest and the increased educational sophistication of the Australian community. The significant proportion of the tax dollar which is spent on education and the need for continuing public support for the education industry provide pragmatic reasons, as well as ethical ones, for encouraging public debate on educational issues.

We would contend that there is a whole range of educational matters capable of public discussion. On most, public input will be highly valuable to the decision process itself. On others, knowing public reaction will facilitate strategies in decision-making. In all, adequate communication by professional educators of reasons for change will be prerequisite to effective implementation of new policies (Power *et al.*, 1982: 123).

As examples of issues capable of public debate, we would include the relationship between education and work, the distribution of resources, the control of schools, curriculum content, transition education, education for the gifted, integration, certification, the role of computers, the restructuring of secondary education, and so on. Of course, such issues warrant specialist research and inquiry but they also deserve informed public debate. When the specialist inquiry is shrouded in secrecy, the likely scenario is an emotive and defensive public reaction to an announcement (or a press 'leak') instead of constructive and informed discussion.

What Conditions Might Change Public Opinions of Schools?

In spite of the periodic criticisms of schools, our scenario for future public opinions of schools is an optimistic one. Given that knowledge about schools is a function of personal contact with them, we see numerous indicators of much closer contact between schools and their communities in the future. Moreover, we believe that greater participation by the public, not only in the processes of schooling but also in organisational and policy-related matters, will result in a decline in the demand for public accountability of schools and an increase in public confidence in schooling.

We acknowledge that this is a long term view and that in the shorter term schools will continue to be criticised on particular issues or mistrusted by those who continue to hold unrealistic expectations. The longer term changes which we see as indicative of greater public participation in, and awareness of, schooling and conducive to public confidence about schools include the following:

(a) higher retention rates at the upper secondary level (Tannock, 1983), even if the changes are relatively slow and only partly for educational reasons (Power, 1983);

(b) a diversity of school types in public and private sectors and a blurring of this division;

(c) greater participation by adults in formal schooling;

(d) a broadening of curriculum options along with efficient ways of teaching communicative and numerical skills;

(e) greater use by communities of the school as a learning resources;

(f) extensions of the school into the home through the further advancement of modern technology;

(g) an emphasis on part-time formal education along with part-time work or other activity (Crittenden, 1981);

(h) the need and the motivation for continuing education;

(i) greater use of community resources by the school;

(j) demands for further education by greater numbers of retired persons;

(k) greater emphasis on a caring environment;

(l) opportunities to build a portfolio of formal credits for school achievements in lieu of certificates at particular stages;

(m) the availability of learning packages for hire or loan from school resource centres;

(n) further work opportunities for community members as semi-professionals in the school organisation;

(o) longer hours of opening and greater flexibility in timetabling (Board of Teacher Education, Queensland, 1982).

Implications for the Profession

If our scenario is even partially accurate, does this mean a reduced role for the professional educator? We would contend it will result in just the reverse. The provision of educational resources alone will not result in their effective use. The need for much better communication between schools and their communities is evident today (Power, 1982). This need will increase. Further complexity in the links between the school and the community will call for innovative organisation and skilful management. But the greatest need of all will not be for managers nor organisers nor bureaucrats nor technologists; it will be for educational leaders in the full professional sense.

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GIVING AN ACCOUNT: CRITICS AND QUESTIONERS

J.G. OWEN

Education with its long history, its complicated design, the fact that it serves many purposes and that it has from time to time been altered, is rather like a 900 year old cathedral in my home town. The west front is being renovated and the image screen, as it is called, is being restored. Arguments about the rights and wrongs rage between mediaevalists, architectural historians, conservationists and those whose task, as they see it, is to act as guardians of the holy place. Their expectations overlap but each one claims an equal right to be heard. And each one expects his argument to prevail.

In an age of principled consciousness — and we have been living through one for the past forty years — it matters that each position and each argument is stated, now. What happens in twenty years or two hundred matters less not because those who do the arguing are sceptical about the long term implications of the world in general but because their expectations have urgency and immediacy.

I want to argue that the presence or absence of urgency makes a difference to expectations. The expector we ought to take notice of, if I can use such a phrase, is the person who has specific reasons for prefering this result to that one and who, to that end, can see his plan succeeding if somebody else — whose work is an important contribution to that plan — meets his expectations. Vice versa, if the work of the contributor does not come up to expectation, the plan fails.

The most obvious example is that of parents who want their children to get enough out of education to do well in later life. They are not in the same lobby as some other of the interested parties and indeed education, like an antique building, also has its conservationists, mediaevalists and guardians of the holy place. It also has improvers in the form of changers and innovators.

Those who wish both to preserve and to improve are well represented in the parent lobby. As watchers and as members of pressure groups who make their expectations very clear, parents seem to receive more substantial support from the federal government and from some states in Australia than they would in England. But parents there have a statutory voice in school government and are under no obligation either to pay for any part of the curriculum or to contribute to maintaining the fabric of a school. They exercise choice between schools more freely than they once did but they are not substantially helped to use independent schools. Denominational as well as secular schooling is free.

The fact that in this way parents in England receive a better deal than some people say they do in the Australian system still does not dim their ambitions (Sallis, 1981). They pitch their expectations high and they ask for a considerable degree of accountability. The Advisory Centre for Education and the National Association of Governors, for instance, expect

(i) a common minimum standard of educational provision but with diversity between schools;

(ii) a reconciliation of choice with equal opportunity;

(iii) the safeguarding of children's chances so that they are, in the exercise of choices on their behalf, not excessively dependent on their parents' capacity to choose, to support and to participate in school matters;

(iv) a mutual accountability shared between school and home;

(v) the establishment of relationships between home and school in such a way as to ensure that all parents have the confidence to participate — and not only those involved in the minority representation of formal accountability;

(vi) compensation for the child in school when the input of the home itself is low. (*ibid.*)

These are very demanding expectations. Policy makers, politicians and governments can only reply in the same way as principals or inspectors: some things can be improved, others cannot. No entirely satisfactory response can be made to all six propositions. For some of them account could only be given over a long period of time, when social practices had changed. Others require, in almost any western country, major political changes — and this is particularly true of the expectation that choice should be reconciled with equal opportunity.

To be faced with a list which is as daunting as this drives us to say that we would need to be very precise in defining who it is that these things are being expected of. But it would be more to the point to ask what the six improvements would achieve.

The answer is that they would be self-sufficient. Once they were achieved in their own right they would not unlock another purpose. Unlike the hopes of parents who ask for good education because they expect it to help their children to stand on their own feet later in life, the six propositions are ends, not means. In other words (to take one of the six) there ought to be mutual accountability between home and school because it is right that that kind of accountability should exist. It is a circular argument. It implies that education would be better as a result. But it would need to be argued out as to whether mutual accountability in fact would make education better.

School and Social Order

The neo-Marxists, including Bourdieu (Musgrove, 1979), give the school a position of central importance in the social order. Aspects of schooling and of the training of teachers are regarded as part of the ideology which legitimises the continuation of social inequality. Schools are important in this way of thinking because they are regarded as converting a child's family advantages into cultural symbols and scholastic credentials which then become a basis for their own subsequent social position.

We might openly acknowledge that a school would be a means to this end if these explicit arguments were running in the same direction. But they are not and the contrary view then comes forward, to the effect that it is the family which provides 'legitimating ideology'. And families who cooperate with the school system for their own purposes (the family-education 'couple', as it is called) do indeed use schools as means and not ends.

The last clear demonstration of this in England was in 1968. The Schools Council, with the Government Social Survey, published a picture of what parents, teachers and young people expected schools to have provided by the end of the statutory school attendance period (Schools Council, 1968). Not surprisingly, the passage of time between the ages of 16, 18 and 21 changed the views of pupils and of parents about what they valued. Equally unsurprisingly qualifications, getting a job and holding it were regarded as very important, with things such as standing on your own two feet and being confident a rather long way behind, and with other qualities being almost lost to sight — such as breadth of study, spare time interests, running a house or coping away from home.

In contrast, heads and assistant teachers valued most highly the things which schools did in developing people's personalities, in encouraging their independence, in getting them to behave confidently, in helping them to know about right and wrong and about getting on with each other.

Little or nothing was done about the very wide gap between home and school expectations. This could be excused because a great expansion was taking place in education. Nevertheless, comparable findings about primary school children were taken up. In that sector, much was done about teacher-parent contact, about explaining the school and about assessing, with the parent, the child's performance. The result is that in England by now it is difficult for any interested parent to feel his or her child is, at the primary level, being 'done down'. This is increasingly true about those who are handicapped: there is more sharing, more mutual assessment and more marking of the milestones. Theoretically at least, expectations about the individual pupil or student have less chance of going wrong.

Parents narrow down the risks of things going wrong. They become precise about choosing those whom they want to be responsible to them. They go beyond the general idea of accountability as being one type of what has been described as essential administrative cement in a democratic society (Lello, 1979). They know that no one can duck out or tell half-truths and that everyone who has a finger in the pie has not only to give an account for what he or she is doing but also has to give that account to every other interested party.

Anyone who is excluded from the list of those to whom an account should be given immediately raises an outcry. We can only imagine what it would be like if teachers said they were not accountable to parents.

The Family Link

Not unnaturally most studies of accountability do give full weight to the family link. What tends to be left out is the idea of accountability to government (Elliott, 1982). What tends to be given almost too much emphasis is the need for the heads and principals of schools and colleges to provide information for staff, employers, parents and local communities (Becher and Maclure, 1979). By now that information has, in England, become a matter of compulsion. The risk is that we may now be helping the administrative cement to harden and in doing so, to deny responsiveness.

To worry about diminishing our responsiveness is very worthy but we are, of course, thinking about only half the story since we always deal with the responsiveness of teachers, of schools and the system. The other half of the equation — the parental side — is hardly asked for accountability at all.

There is no sanction against the parent who fails to live up to the school's expectations. In state schools the final sanction of removing a child from school can only be used in the most difficult of cases. Yet in independent schools that sanction is indeed available. Parents worry about the children being admitted in the first place and then about their not failing or being dropped out before they reach the goal.

Governments who want to maximise parental choice and who flirt with voucher systems seem to work against their own governmental systems. They are accused, certainly in England, of weakening the fabric which they are appointed to support. But if they are also governments who are committed to open market competition and to encouraging the connection between self-interest (and commitment) with the idea, for instance, of quality of education, then they are bound to recognise that the most interested parents will ask for (expect) the delive y of those parts of education and

training which do permit their children to get to their own and their families' goal. And this brings me back to my point about the expecters we ought to take notice of. Do these make up a third, or two fifths of the parent population?

The major statement about expectations in England in 1968 made it clear, if it was not clear already, that the frequency of meetings between the family and the teacher, the sharing of information and the checking out of the latest state of one's expectations was something which happened less with older students. It was perhaps always like this. Adolescence produces change in the family as well as in the child. Distances open up between children and grown-ups. A 1983 enquiry would not differ much from 1968, except that teachers will now indeed respond differently about employment and about behaviour — if the 12-school survey of Rutter is to be our model (Rutter, 1979).

Once a certain stage is reached, parents know the weaknesses of the school and the teacher. They know the weaknesses of their children. They do not expect miracles. The same is true of teachers. Each side stops preaching at the other. Expectations are well-known. If anything goes wrong it is likely to be because pessimism can lead to undervaluing. But if complacency thinks that the potential is there while it turns out that the effort is not, frustration breaks out.

Contracts and Agreements

In order to try to guarantee that everyone makes the effort and gives his or her commitment, one way out is to lay down precisely what the school expects from the student and from the teacher. But this so-called 'negotiated contract' will continue to leave the bulk of the responsibility on the side of the teacher until parents, for their part, make an enforceable pledge to cooperate with the school. Alistair Maclean (1983) proposed this in a European context earlier this year. A school and family concordat is attractive, provided that it could work without drastic measures such as using courts of law or removing children from the care of their parents.

It seems doubtful, then, whether parent accountability can amount to much in state schools. It will, however, have its place in independent education. But can state schools draw a new benefit from extended systems of recording, assessing and monitoring? And can parents be drawn into a position where they cannot claim to be ignorant? How much good, for example, can emerge from the development of Records of Achievement, Records of Performance and Pupil Profiles? They certainly seem timely and useful in pinning down what the schools see to be wrong. This can be taken further by schools such as those (state schools) which require all school reports to be collected in person by the parent, in order that he or she may also be given an up-to-date report by a school tutor twice a year.

Without information and if they are left in ignorance parents can quickly harbour doubts. Doubts develop into a sense of injustice. The result is that the parent and student begins to feel let down.

To be 'done down' in the sense of leaving school without an adequate qualification for a job, for training or for further education matters less if your potential employer or trainer knows other things about you — your capabilities, your interests and your achievements. But in England employers and trainers either do not wish or are unable to use detailed profiles. They are unaccustomed to giving weight comparable to that of examination results to qualitative statements about people's experiences. In this they may be in no worse a position than many teachers. Either way, if descriptions and profiles are going to tell you what to expect about someone who has been in school, we need to develop methods of assessing not only the academic, the practical and the other curricular aspects of education but also the experiential side of things. The

progress made in the United States at the level of higher education is clearly already affecting pre-undergraduate attitudes. In Britain the two movements of securing credit transfer for sponsored or experiential learning at first degree equivalent is slowly being established (Evans, 1981). The incorporation of credit for comparable work at a lower and younger level of study is taking shape in the immediate post-school (16 to 18) period (F.E.U., 1979).

Whatever the assessment, teaching can let down the student and the student can let down the teacher. The education system cannot control the diversity of expectations. However different the pupils or the students are, they themselves and their parents express wishes which have an apparent uniformity.

How to Manipulate Expectations

However diverse people's ambitions are and however diverse education's response, it is still a part of society which has to provide something like equality of opportunity, certainly in the state sector. It is virtually impossible within a plural society to put that ideal into practice. But if you are let down it is nevertheless blamed on education. Reproach is not levelled at the family. Nor is it regarded as the fault of society.

Will the same assumption be true when it is government which, on behalf of society, closes down people's opportunities in education? In Australia the percentage of students starting courses at universities or colleges of advanced education, straight from school dropped from 19.3% to 14.5% between 1974 and 1980 (Karmel, 1981). In the United Kingdom between 1968 and 1978 the proportion of the age group in higher education increased from 11.8% to 13.5%. This will decline in Britain because of expenditure reductions and because of doubts about the value, relevance and necessity of higher education. And, as in Australia, the decline will also be attributed to worsened student grants.

Whether a society has a shallow commitment to education has in one way to be measured by its policies about access to higher education. This rests on:

(i) the social equity argument (greater participation by working-class students);

(ii) the argument that everyone profits from higher education (it should be made available as a straightforward benefit to more people);

(iii) the deprivation argument (housewives, retired people);

(iv) the Trojan horse view (access should be widened in order that new needs and expectations may express themselves and in order, through that, to change what is taught and how it is taught).

In England the steadily tighter squeeze on admissions will become evident this October and again in 1984. No one doubts that the squeeze is inevitable. The effect of financial constraints will be reinforced by arguments that less money should not be spread out more thinly.

From the employers' view in Britain there is, apart from engineering, chemistry and some of the technologies, no general under-provision of graduates. Professions which like to keep themselves small will always ask that fewer people should become qualified. Shortages — deliberate or not — will develop in some professions and in some public services.

When we talk about access, then, whose expectations come foremost? Schools and colleges work hard to persuade students to continue their education. Some families will switch off for economic reasons and some students will switch themselves and

each other off. This is not new. Do the new constrictions then come entirely from those who make decisions about resources? The Treasury? The Cabinet? Our grants committees?

Governments can make a shift in their policies about tuition fees and about student maintenance grants. They can rationalise the provision of courses between a number of different institutions. They can make decisions about academic programme areas. They can pay heed to expectations which are expressed by politicians and economists. And they may or may not pay heed to industry, to other employers, to trainers, to families or to colleges and universities. The less heed they do pay to these the more likely they are to disappoint expectations, in the broad unargued form in which expectations about public education are shaped.

But politicians dislike disappointing people. As a result they are driven to the management of expectation. To raise expectations is one way of manipulating pressure. Those who deliver a service raise their users' expectations as a method of promoting confidence and building up loyalty. Non-providers talk about other people's expectations in order, whether through disappointment or satisfaction, to use a lever.

Not all the expectations which are entertained about education result from other people's claims or promises. Tradition breeds expectation and messages of accountability manipulate it. To explain by paraphrase, on the lines of government department statements, may appear to explain matters neutrally. To explain graphically (in the way of pressure groups with dramatic messages) tends sharply to heighten the temperature of expectation. Pastiche is the favourite of television and parody another method. Quotation in a selected context gives us the kind of collage we find in a principal's report. Each method can massage the message.

Specific messages, in answer to the individual expectation of parents who wish education to serve ends which the young person and the family have defined, differ from general messages. It is the latter that are open to manipulation. They can be made to fit a political purpose or to appear to match a narrow pattern of economic need. They will always receive publicity but their generality prevents education from giving a sensible answer.

Nevertheless private people on behalf of their children, individual schools on behalf of their teachers, and commentators on behalf of the man in the street — each of these will try to translate large messages into the microcosm of daily practice in education. There is some connection, of course, because common sense is the link between generalised statements of aim and private expectations. But there is a risk of bogus accountability.

Expectation is about success: claims are high and positive. In the main they are about excellence. Often they are about justice and fairness and sometimes about equality.

Not Taking No for an Answer

Obviously all of us within education need to maintain a faith in our own power to deliver a high quality of service in response to verifiable statements of ambition, of need and of aspiration. Confidence is bred by accurate and up-to-date information. Inside the world of education we need to inform each other, despite our compartmentalism.

Several times in recent years I have asked those who are responsible for in-service education in England to keep school teachers, college lecturers, administrators,

advisers and inspectors aware of political, economic and governmental shifts of policy and direction. I have done this in order to open up the awareness of the separate sectors and to underline the extent to which, inside the education service, we are dependent on each other.

Very recently, a national inspectors' report about the initial training of teachers revealed the uncertainty of the new teacher about matters of organisation, discipline, pastoral care and the relationship with welfare agencies outside education (H.M.I., 1982). This seems to be as inexcusable as turning out teachers who fear the microcomputer, who shy away from social and political education or who are satisfied to know little about world affairs. It is on this level that the education service must reveal that it is ready to answer expectations, expressed at any level of generality for whatever purpose, political or not. That capacity to respond is part of our professionalism. My view that this should not be confused with the answers we give to well-defined expectancy has, I hope, become clear.

The expectation which society, the family and the world of work entertain about education is bound to be high, difficult in its demands, over-broad and sometimes self-contradictory. But we cannot say that it is wrong. Our task is to understand what is expected, to work hard at making expectation well-informed and then to meet it. If we need excuses, other people will redouble their criticisms. Our best answer is to show that we care about those who are ambitious as well as those who are confused. We care for the inarticulate as well as for those who speak the language of accountability with utmost clarity. We care for those who fight to get an equal chance in the same way that we beware of overlooking those who can largely see to their own needs. We care for families with more clarity of mind than we care for the needs of society. But in taking the partnership with students and family fully into account, we know that that is also the best way to meet the economic and industrial demands of our countries as clearly as we meet their human and moral concerns. If we answer expectation in the way we should — and if I may borrow other people's words — a proper organisation of educational and economic life can unleash a people's creative powers without recreating oppressive poles of domination and subordinacy, of self esteem and self hatred, and of affluence and deprivation.

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SECTION III:
EXPECTATIONS IN THE CLASSROOM

GETTING ON WITH IT: CLASSROOM DISRUPTION IN THE PRIMARY GRADES*

PETER O'BRIEN

Introduction

Children from low-income families have been commonly identified as more disruptive in the classroom than children from less disadvantaged backgrounds; this is a widespread view. In the United States, for example, Harvey (1980:282) noted that "the low income child is supposed to be noisier and more physically aggressive than high income peers" although her own observation in classrooms did not support such claims. Across the Atlantic, Little (1971:65), in Britain, suggested that the "picture of the inner-city (low income) school as being more difficult to teach and learn in than the (higher income) counterpart" was conveyed by the literature although he noted that most of this writing was anecdotal and impressionistic.

In N.S.W. discussions with educators in the Mt Druitt primary schools, located some thirty five to forty five kilometres to the west of the business centre of Sydney, serving a population drawn in the main from State Government provided housing, had led to the identification of classroom disruption as a worrying problem in these 'disadvantaged' primary school settings.

Reasons Advanced for "Greater Disruption"

It has been hypothesised that a basis for greater disruption amongst low-income children may lie in the greater personality disturbance they are assumed to suffer (e.g. Brophy and Putnam, 1978:185) or in the greater maladjustment assumed to be present in such populations (e.g. Little, 1971:66). Such pyschological conditions have been assumed by some to lead directly to disruptive behaviour in the classroom, although an indirect linkage, via educational failure, was suggested by Little (1971:66) who saw failure preceding and giving rise to classroom misbehaviour but succeeding maladjustment. The view of the low-income background child from this personality deficit perspective suggests that they are impulsive and out of their own or their teacher's control, having failed to adopt behaviour necessary for adjusted living in the complex, social world of the schoolroom.

On the other hand explanations for the supposed greater disturbance in low income classrooms may focus on the school as an institution and attempt to highlight deficits either in public policy held for schools, or in persuasive educational perspectives, or in the educational practices adopted by the school with low income children, rather than identifying deficits in children. Others (e.g. Brophy and Putnam, 1978:8) suggest that the failure to provide classrooms either low in, or free of, disruption rests within the teachers' lack of skill in being able to avoid or handle classroom disruption. Such views would suggest the need both for changes in the educational philosophies of schools and teachers and for additional teacher training to help change the practices which prevail in classrooms rather than seeking the changes in pupils or in their families suggested by pupil deficit views.

Types of Disruptive Behaviours

A disruptive incident, for the purposes of the study reported here, is a sequence of behaviour involving both the pupil(s) and the teacher: a child, group of children or the class behaves in such a way that class order breaks down and the teacher responds

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with the intention of restoring order. In the disruptive incident the actual pupil behaviours identified as disruptive have been associated into a variety of classes of misbehaviour (e.g. Quay, 1977; Rohrkemper and Brophy, 1980; Mattaliano, 1980) which fall generally into two broad groupings: conduct-disordered or personality-disordered behaviour.

It has been suggested that the conduct disorder group of behaviours include such activities as physical and verbal aggression, talking to peer, movement and inattention, whilst personality disorder behaviour such as under-achieving or low achieving, withdrawal, rejection and failure syndrome have been included in operational definitions.

As personality disorders may manifest themselves as a retreat from the classroom rather than an intrusion upon it, it is the conduct disorder behaviours which are identified generally as disruptive for, as Quay (1977:9) suggests, "a child ... consistently manifesting these characteristics is almost certain to be at odds with the expectations of most behaviour settings".

Measuring Disruption

Observational research into classroom disruption has demonstrated clearly that pupil misbehaviour and teacher response to it can be observed validly and reliably. Few researchers, however, have set out to observe more than two or three pupil misbehaviours, of the scores of possibilities, while teacher response to pupil misbehaviour has been operationalised typically in observational research into a narrow range of behavioural categories (e.g. Jones and Eimers, 1975; Lavergne, 1981). From this research, however, it has been demonstrated that teacher behaviour contingent upon categories of pupil misbehaviour can be varied systematically (e.g. Harris and Sherman, 1973; Borg and Ascione, 1979) and that pupil behaviours such as attention to task and productivity will vary in relation to manipulated teacher behaviours (e.g. Jones and Miller, 1974; Jones and Eimers, 1975). It is also possible to extract from reports of observation of classroom disruption a measure of the rate of occurrence of disruption in normal primary school classrooms. While such extraction is not a straightforward matter, in that deduction and extrapolation play a role in calculating a rate measure from several studies, such a measure and knowledge of most common rates could help in a consideration of the validity of suggestions that disadvantaged, or low-income, youngsters are to be found in classrooms suffering greater disruption to lessons than is the case with their higher income counterparts. From the seven studies identified (Thomas, Becker, Armstrong, 1968; Harris and Sherman, 1973, Solomon and Kendall, 1975; White, 1975; Bossert, 1977; Jones, Freemouw and Carples, 1977; Behnke *et al.*, 1979) which either reported a rate of occurrence measure directly or permitted a deduction of a rate measure a total of 18 rate measures were found; the mean rate was 15.67 disruptions per thirty minutes (S.D. = 14.8) although no most common rate could be identified within the wide range of scores. Rates of occurrence as low as 1.95 disruptive incidents per 30 minutes (Bossert, 1977) and as high as 50.4 disruptions per 30 minutes (Harris and Sherman, 1973) have been reported. Only one (Jones, Freemouw and Carples, 1977) of the studies included low income background children in the sample, the limited research thus permitting identification of no general or common level of disruption in low income classrooms. These studies give little guidance as to what might be expected when classes in the Mt Druitt schools were observed.

Stages in Disruptive Behaviour

Variations in disruption rates have been identified in relation to the grade level of pupils being observed. Brophy and Evertson (1979) identified four stages within the

age span of the infants' and primary school child at which different types of pupil disruption may occur and different goals and techniques for teacher management may be implied. The second of the stages occurs in the middle grades of primary school, at a time when "the need to stress classroom management is reduced, and teachers can concentrate on instructing children in the formal curriculum". This stage continues, it was suggested, while the majority of students view the teacher as the legitimate source of authority and see their role as fulfilling the requests of their teacher. Evidence gathered from interviews with Mt Druitt children during their third grade year suggested that this was exactly their view of the world of school (Almy *et al.*, 1981). Behnke *et al.* (1979:4) provide data, gathered in classrooms at four grade levels from kindergarten to third, which support the conclusion that the middle primary school grades may be less disrupted than earlier grades for they found greater preservation of instruction time free of disruption as grade level increased. On the other hand Harris and Sherman (1973) report higher levels of disruption in the fourth and fifth grade classrooms observed in that study than were reported in any of the other six identified studies, while White (1975) reported data indicating no change in the rate of disruption observed in classes ranging across all grade levels from first to sixth. Again, little guidance in the formation of expectations for what might be found in Mt Druitt classrooms could be gleaned from the equivocal findings of the set of identified studies.

A thorough review of the Australian educational literature led to the identification of a large set of exhortatory articles but of no systematic study of disruption in Australian classrooms. Investigation of the occurrence of disruption in the Mt Druitt classrooms and identification both of any linkages between disruption and pupil socio-economic status or grade level or with teacher management appeared useful as findings could increase the understanding of the dynamics of 'disadvantage' and influence educational policy, and preservice and inservice teacher education in Australia.

Subjects

Within the population available to the Mt Druitt Longitudinal study of which the research reported here formed part, children were spread across five schools within the Mt Druitt district and three schools located elsewhere within the Sydney greater metropolitan area. All Mt Druitt schools had been identified by the Commonwealth Schools Commission for special additional funding as a 'disadvantaged' school. The poor average performance of the children upon tests of educational achievement and the presence of Aboriginal children and single parent family children as a greater proportion of the Mt Druitt school's population than normally found in Australian schools were partly responsible for the identification of the schools as 'disadvantaged'. None of the three additional schools had ever been identified as disadvantaged in a similar way.

The male parent or guardian of Mt Druitt children occupied positions significantly different from those of non-Mt Druitt parents. Mt Druitt male parents were found far more frequently in 'blue-collar' work as tradesmen, labourers or assistants than were the male parents from the contrasting schools, over 50% of whom were employed in sub-managerial, managerial or professional positions. There were 18.2% of single parent families in Mt Druitt compared to 10.8% elsewhere and male unemployment registered at 9.6% of Mt Druitt male parents (in 1981) compared to 0.5% for contrasting school male parents. The mean achievements of children in two of the contrasting schools were significantly greater than Mt Druitt children for mathematics, vocabulary development and reading comprehension. The children of the third contrasting school were significantly better than some, but not all, Mt Druitt school's children.

In 1981, as an extensive systematic observation study was to be conducted it was not possible to include all classes in the observed sample. A selection of 17 classes was made from the 34 available in order to include at least two classrooms at each of the eight schools; an additional class was chosen from amongst those at the largest Mt Druitt school. An attempt was made in 1981 to include all 'A' stream classes, an equal number of male and female teachers and a representation of all age ranges of teachers in the total sample.

In 1982 as extensive ethnographic, rather than systematic, observation was to be conducted all but four of the 32 available classrooms were observed for disruption. Four teachers who had been observed in 1981 were avoided in 1982. There was a slightly greater representation of older (over 31 years) teachers in the contrasting schools in that year, although as age of teacher does not appear to be related to rate of disruption in classrooms this does not present a major threat to the survey design.

The Observation Instruments

The review of the research literature dealing with classroom disruption did not identify a pre-existing instrument which would enable systematic observation of all variables of interest in the consideration of disruption in the Mt Druitt and contrast schools' classrooms. Concerns with instructional context, the pupil initiator(s) of the disruptive incident, the nature of the pupil disruption, the nature of the teacher desist and the immediate effect of the desist, the events (or facets) of interest in the present study, were not reflected in pre-existing instruments; at least, not in total. It was clear that an original instrument would need to be developed for the Mt Druitt Longitudinal Study.

Observation in the classroom, discussions with teachers, and the review of the relevant literature led to the development of check lists of possible pupil and teacher behaviour during disruptive incidents. Further observation in a variety of classrooms led to elimination from the lists of rare behaviours, on the basis that establishment of reliable observation would prove most elusive for such categories, and to extension and refinement of the definitions and illustrations of each remaining pupil disruption and teacher desist category. During the training period, with the benefit of additional insights from the three experienced observers undergoing training, some further sharpening of definitional boundaries occurred.

As observation of disruptive incidents was to occur in the context of systematic observation with a broader focus executed through the adoption of a version of the Personal Record of School Experience (PROSE) instrument (Medley, 1969) categories assigned to instructional contexts in PROSE had previously been learnt by the observers. Both for simplicity in observation and as a check on differential rates of disruption in different instructional contexts, through a comparison with PROSE records obtained in the same classroom, the same PROSE categories were adopted within the disruption monitoring instrument.[1]

As a check on immediate effectiveness of teacher desisting a simple threefold classification (cessation or lessening of pupil disruptive behaviour, no change discernible in pupil disruptive behaviour, an increase or strengthening of pupil disruptive behaviour) was adopted. Through classroom trialling during preliminary observation this approach was found to be acceptable, problems arising only when the observer could not make a decision from observation, as to which category applied. In such cases the most conservative decision was adopted, the category of no discernible change being assigned and the system was found, in these circumstances, to be reliable. The instrument used was DESIST, named after the Kounin usage of the term.[1]

[1] Copies of the DESIST and modified PROSE instruments used in this study are available from the author on request.

The Mt Druitt Longitudinal Study adaption of Medley's (1969) PROSE instrument is included as Appendix B. As a further data source, the instructional context facet categories and the pupil misbehaviour facet categories were placed together to form an instrument, called here the Off-Task Scan. This instrument was employed so as to produce a 'snapshot' of the class activities, giving a detailed count of all pupil off-task behaviour category by category at a single point of observation (say, within one minute). The Instructional Context in which the pupil behaviour was occurring was recorded. Off-Task Scan gave a record of potential disruptive incidents at one point; it provided a record of all pupil initiated transgression of rules for classroom behaviour. Off-Task Scan is included as Appendix 1.

Three experienced observers were trained, over a period of fifteen days, until such time as satisfactory inter-observer reliability had been established for both the PROSE and the two disruption instruments. Initially, training time was spent in discussion and memorisation of all categories. This was followed by a short period of three days observing videotaped excerpts of actual classroom interaction, chosen from a set of available tapes, specifically because the majority of categories were illustrated on the tapes. Time was then spent observing, singly, in pairs, or as a group of four, live classroom interaction. Inter-observer reliability was accepted as reaching a satisfactory level when 80% agreement or better between each of the six possible pairs of observers was reached on at least three consecutive periods of observation. Reliability was reestablished, at least at the same level, prior to commencement of observation in the second year of the Study.

The Observation System

Given the DESIST, PROSE and Off-Task Scan instruments and four trained observers, a schedule of observation for 1981 was developed. Observation of disruption would be carried out by at least two observers on at least two days (i.e. at least one day each) in each of the observed classrooms, for a minimum period of at least four observation occasions per day. DESIST was designed to produce a reliable time sample of actual disruptive incidents, i.e. as disruptive incidents occurred, they were noted by the assignment of one category for each of the six facets of disruption covered by the instrument. A five minute time period was adopted as the basic unit of observation; any disruptive incident which was observed during this period was recorded, the number of incidents being limited, hypothetically, only by the teacher's ability to deal continuously with disruption for the five minute period and the pupils' role transgressions.

The five minute observation periods were dispersed throughout the morning; observation following each fifteen minute period of PROSE observation so that, generally, at least two DESIST periods occurred prior to morning recess and at least two in the following period prior to lunch. PROSE observation of each target child took place for an elapsed period of five minutes with three target children being observed in succession of five minute periods in one observation period. PROSE viewing produced at least one hour of data each day with the instructional context noted once every twenty-five seconds during observation. The Off-Task Scan observation occurred prior to the PROSE recording. Each complete observation period comprised:
one period of approximately one minute of Off-Task Scan observation;
three by five minute periods of PROSE observation;
and, finally, a five minute DESIST observation.

In 1982 an ethnographic study of selected classrooms was made although DESIST observation was also conducted in all but four of the 32 classrooms. This systematic observation was carried out by two observers who visited each classroom for a

morning; thus, at least eight DESIST observations were completed (four by each observer), in a period of two separate mornings of observation.

Results

Statistical computation was carried out through the programs available within the SPSS computer package (Nie, *et al.*, 1975). Having regard to the nature of the samples within the study, with some tests of significance being carried out with groups of ten classes or less, it is best to regard any findings as tentative and suggestive of later hypotheses. Nevertheless, a significance level of .05 was accepted as indicative of a reasonable probability that samples were drawn from different populations so as to maximise identification of useful hypotheses for later investigation.

Disruptive Incidents, Rates of Occurrence

The review of studies reporting data from which a rate of occurrence of disruption statistics could be identified had not led to a decision with regard to a most common rate. It may be remembered that in those studies a range of disruption per 30 minutes from 1.95 to 50.4 had been noted, with a mean of 15.67 disruptions per 30 minutes and a standard deviation of 14.8. The rates of occurrence of disruption observed in 1981 and 1982 are reported in Table 1.

As the Table indicates, the range of rates of occurrence of disruption in 1981 ran from a lowest rate of 6.0 disruptions/30 minutes to a greatest rate of 25.98 disruptions/30 minutes, while in 1982, a lower limit, 1 disruption/30 minutes, and a higher limit, 37 disruptions/30 minutes, were registered. Compared to disruption rates recorded in primary classes in the U.S.A., these N.S.W. classrooms displayed both an absolutely lower limit, 1.0 disruptions/30 minutes, to the occurrence range and, in both years, a lower mean occurrence of disruption rate. In several of the U.S.A. studies, teachers had been nominated by their school principals for inclusion in the study because the principal believed the teacher would benefit, i.e. several studies may have included teachers believed to be poor managers. None of the teachers included in the observation reported here were identified spontaneously by their principals as being poor managers — although casual observation by the study research staff, prior to undertaking systematic observation, had indicated that a range of managerial skills was likely to be represented in the behaviour of teachers observed. Principals were not asked to comment on the managerial skills of any of their teachers in this study. There is no reason to expect that, as a group, teachers were any less, or any more skilful as classroom managers than would be the case for N.S.W. primary school teachers generally and the probability is that a representative range of disruptive incidents and teacher ability to handle disruption were captured in this study. There is, however, no way of being certain that this was so.

The first set of comparisons displayed in Table 2 are the calculations from the data of the rate of occurrence statistic, the disruption/30 minutes measure, for 1981 and 1982. The concern here is with the expectation of differential rates of disruptive incidents in classrooms at different grade levels, with higher grades expected to display less frequent disruptive incidents. As far as could be ascertained from the literature review results tabulated below are the first dervied from a longitudinal study of disruption, all others being findings in cross-sectional research.

Two comparisons are reported: the first includes all schools while the second draws data from Mt Druitt schools only.

Table 1. Rates of Disruption/30 Minutes: All Classes Observed 1981 and 1982

1981 Class I.D.	1*	2	5	8	9	10	12	13	16	20	22	25	26	29	30	31	33			$\bar{X}$
1981 D/30	11.25	22.5	15.69	7.99	14.25	9.6	23.25	25.98	7.5	12.66	12.00	6.00	15.00	12.00	9.33	12.00	19.09			14.715
1982 D/30	** 6.00			24.00	22.00	7.00	24.00					12.00	12.00					6.0	18.0	
1982 Class I.D.	4			8	9	11	12					25	26					1	2	

1981 Class																				
1981 D/30																				
1982 D/30	12.0	19.0	37.0	34.0	12.0	23.0	12.0	14.0	12.0	12.0	24.0	10.8	6.0	12.0	8.0	12.0	1.0	6.0	29.0	15.24
1982 Class I.D.	3	5	6	7	10	13	15	16	18	19	20	24	27	28	29	30	31	32	34	

* Class I.D.s are for Longitudinal Study purposes only.
** Disruption/30 minute Rates are aligned for classes comprised of 85% same pupils.

Table 2. Comparison of Disruption/30 Minute Rates for 1981 and 1982

Year	Schools	N	$\bar{X}$	Variance	SD	t	df*	Siglev
1981	All	17	14.715	37.858	6.153	−.23	42.18	0.817
1982	All	28	15.239	79.503	8.916			
1981	Mt Druitt	11	16.27	29.964	5.474	−.52	26.99	0.609
1982	Mt Druitt	18	17.66	80.623	8.979			

*Separate variances assumed

As Table 2 indicates for both comparisons the greater rate of disruption occurs in the second year of observation although in neither case is there a significant difference between occurrence of disruptive incidents in 1981 compared to 1982. The results here do not support the expectation that disruptive incidents become rarer with the increasing grade levels of the pupils.

Teacher Responsibility for Classroom Disruption

There was much evidence available in the research literature to show that manipulation of teacher managing behaviour was associated with changes in pupil behaviour. Such findings suggest that it may well be possible to observe that the same class group of children, given changes in teachers, may display different rates of disruption, i.e. it may not only be pupil transgression of rules which creates disruptive incidents but also teachers' varying ability to ignore or manage such transgressions. In Table 3 the disruption/30 minute rates for seven classes observed in 1981 and 1982 are listed. Attention here has been directed to disruption/30 minute rate for classes comprised of at least 85% of pupils in common over the two years although they had different teachers in each year.

Table 3. Disruption/30 Minute Rates: Classes Comprised of 85% Common Pupils, 1981, 1982

1981 Class I.D.	1	8	9	10	12	25	26
1981 D/30	11.25	7.00	14.25	9.6	23.25	6.00	15.00
1982 D/30	6.00	24.00	22.00	7.0	24.00	12.00	12.00
1982 Class I.D.	4	8	9	11	12	25	26

Computation of a coefficient of correlation (Pearson product moment) for the disruption/30 minute rates for the classes across years produced a non-significant coefficient of 0.3417. The implication of the finding is that the relationship between the disruption/30 minute rates across the two years was a chance occurrence, even given the similarity of pupils. Now, the pupils may have been: as disruptive, but the teachers in either year were more or less tolerant of disruption; more or less disruptive but reacting to changes in the teacher's management skills and techniques and/or teacher's tolerance level of rule transgression; or, more or less disruptive because of differential levels of pupil initiation of disruption but such behaviour being accompanied by the same intensity of teacher response in both years. Although reliable changes in pupil initiation of disruption across the year cannot be ruled out as an explanation neither can reliable changes in the teacher's ability or unwillingness to

manage disruption with one teacher being more or less able or willing than the other. Teacher responsibility for the level of disruption, at least in the sense that they do not employ strategies which would control disruption, cannot be eliminated on this evidence.

The Relationship of Disruption and Disadvantage

The second set of comparisons calculated from the observation data was concerned with the relationship between disadvantage and disruption and the question of differential rates of occurrence of disruptive incidents in the disadvantaged, Mt Druitt classrooms compared to those non-disadvantaged classrooms located elsewhere. A test of difference between rates, with the class as the unit of analysis, was performed via the SPSS program (Nie *et al.*, 1975). Results are tabulated below.

Table 4. Comparison of Disruption/30 Minute Rates for Mt Druitt and Other Classes: 1981 and 1982

Year	*Classes*	*N*	$\bar{X}$	*SD*	*t*	*df**	*Siglev*
1981	Mt Druitt	11	14.79	6.39	1.09	15	.3
	Contrast	6	11.24	6.43			
1982	Mt Druitt	15	17.1933	9.468	1.78	23	.08
	Contrast	10	10.88	7.306			

*separate variances assumed

In neither year is the comparison found to be statistically significant (at the $p<.05$ level or better) although the result for 1982 approaches significance.

The expectation that children from a lower socio-economic status background would exhibit higher rates of disruption is not supported. This, of course, immediately brings into question claims of a causal nature; the claim that higher levels of psychological disturbance suffered by lower socio-economic status pupils cause higher rates of classroom disruption, for example, must be viewed with suspicion until grounded in evidence.

The Relationship Between Prior Academic Achievement and Disruption

The next set of contrasts is concerned with the relationship between academic achievement and differential rates of classroom disruptive incidents; the expectation derived from the literature was that lower achieving children would display greater levels of disruption. For this contrast classes were divided into two groups across schools. 'A' stream classes, identified within schools by the higher levels of academic achievement of the pupils grouped into them, were contrasted with the 'B' stream and other class groups for the rates of disruption/30 minutes. All classes observed at Contrast School 1 were what is known as 'parallel', i.e. streaming was not practised as a method of grouping within grades at this school. Contrast School 1 pupils' performance in language and mathematics achievement tests were amongst the highest observed; their standardised test performance placed more than three quarters of them in the ninth (highest possible) stanine. All but a few pupils from Contrast School 1 would be placed in an 'A' stream class if they were to live in

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Mt Druitt and attend school there. In the calculations which follow all Contrast School 1 classes have been treated as if 'A' stream.

From these calculations, displayed in Table 5, the achievement levels of pupils on entry does appear to be related differentially to the level of disruption present in the classroom.

An additional way of viewing disruption is to consider the frequency of periods of instruction free of interruption; it may be the case, for example, that patterns of occurrence of disruption may differ across classes, with classes with the same disruption/30 minute rate having different patterns of disruption. More-or-less concentration of disruption in instruction time with different patterns of crowding or dispersal of disruption may occur. When 'A' stream classes are compared with 'B' stream or other classes for periods of observation (five minute samples) free of disruption no significant difference is found between them (for the 1982 data, $t = 176$, $df = 1152$, $p < .104$). The observation of disruptive incidents in both 'A' stream and other classes indicates that, while significantly greater disruption incidents occur in non 'A' stream classes, with lower ability pupils, the spread of the disruption observed in classrooms of each type over the observation periods was similar. To restate the finding, in any five minute period, the observer was as likely to view a disruptive incident in an 'A' stream class as in any other class, although significantly more frequent disruption would be observed in the non 'A' stream classes in each period of observation.

Table 5. Comparison of Disruption Rates for 'A' Stream and Other Classes, 1981 and 1982

Year	*Classes*	*N*	$\bar{X}$	*Variance*	*SD*	*t*	*df**	*Siglev*
1981	'A'	8	10.41	25.478	3.3	2.61	15	.02
	Other	9	18.44	30.928	6.15			
1982	'A'	10	9.81	35.524	4.795	2.45	21	.02
	Other	13	17.969	87.925	9.614			

*separate variances assumed

Mild or Serious Misbehaviour

As it had been suggested, both by Mt Druitt teachers and within the literature, that low-income children present greater difficulties in the classroom a comparison of the seriousness of the misbehaviour noted in Mt Druitt classrooms and that noted elsewhere was carried out by computation of a one-way chi-square statistic. Talk off-task, listening or watching off-task, playing, sulking, crying, alternative task involvement, tardiness or passive behaviour have been considered mildly deviant, in that they affect few pupils other than the pupil initiator. (This is not to deny that pupil sulking and crying in primary grades may be symptoms of worrying underlying personality problems.) On the other hand pupil call-outs, verbal and physical aggression, arguing with the teacher, tantrums and out-of-seat behaviour have been considered as more seriously deviant for they interfere with on-task engagement of many or all other pupils in addition to the pupil initiating the behaviour. Classes were divided into three groups according to their position in the lowest, greatest or middle third of the total sample stratified by mean occurrence of mild or seriously deviant behaviour per Off-Task Scan. Two comparisons, one for mild, and one for serious deviance, were computed (with the Yates Correction for small n's being applied) and are shown in Table 6.

Table 6. Mildly Deviant Misbehaviour: Average Number of Pupils Observed per Off-Task Scan by Class: Third Grade, 1981

Average Number Observed	*Mt Druitt Classes*	*Contrast Classes*	*Group*	*t*	*p*
Less than 3.6	3	3	lowest third		
3.6 – 4.0	5	1	middle third	1.5	.47
4.1 – 5.5	3	2	highest third		

While no significant difference was found for mild misbehaviour when Mt Druitt pupils were compared to the Contrast School pupils, it could remain that differences would be found for more serious misbehaviour. The results of the comparison for serious deviances are reported in Table 7.

Table 7. Seriously Deviant Misbehaviour: Average Number of Pupils Observed per Off-Task Scan by Class: Third Grade, 1981

Average Number Observed	*Mt Druitt Classes*	*Contrast Classes*	*Group*	*t*	*p*
Less than .26	3	3	lowest third	3.86	.15
.27 – .43	3	3	middle third		
.44 – 1.48	5	0	highest third		

Again, there was no significant difference in the initiation of serious misbehaviour by Mt Druitt disadvantaged pupils compared to their third grade peers in Contrast Schools. The Mt Druitt pupils were as likely as Contrast pupils to be found in classrooms in which relatively little, serious misbehaviour was observed.

It might well be noted, at this stage, that serious deviancy was observed in all classrooms at lower limits of initiation than was true for mildly deviant behaviour. Indeed, some categories of serious misbehaviour almost never did occur. A child displaying a temper tantrum was observed on only one occasion, there was very little verbal aggression and only slightly more physical aggression noted. Sulking and crying behaviours were noted from only six children. When it is considered that observers were present in the third grade classrooms on thirty four days then serious deviancy, apart from 'call-outs' and 'out-of-seat' could be considered a rarity. The predominance of those two categories amongst the serious deviancy behaviours observed may, if reflected in classrooms elsewhere, account for the attention they have received in the intervention literature.

Teacher Desisting Effect

For all observed classes the majority of the teacher desists of pupil disruption was followed by a decrease in the student misbehaviour. In 1981 no teacher desist was followed by an increase in misbehaviour although in 1982 increases were noted in three classrooms. In 1981 almost 92% of teacher desists were followed by decreases in misbehaviour whilst in 1982 almost 85% of desists were so followed. Overall, then, teacher desists did appear to be immediately effective. White (1975:371) had suggested, however, that desists are reinforcing to teachers because they were immediately effective in terminating or lessening misbehaviour although their disapprovals are "not likely to decrease behaviour in the long run".

In Tables 8 and 9 are listed (Pearson product moment) correlation coefficients for the relationships existing between the 'disruption/30 minute' rate and the three levels of observed effectiveness (cessation or decrease, no change, increase) for both 1982 and 1981 data.

Table 8. Correlation Between Disruption Rate and Desist Effectiveness: 1982

1982	*Rate*	*Decrease*	*No Change*
Decrease	−.4904*		
No Change	.0493	−.025	
Increase	.4775*	−.9875*	−.1308

* $p < .005$

Table 9. Correlation Between Disruption Rate and Desist Effectiveness: 1981

1981	*Rate*	*Decrease*	*No Change*
Decrease	−.6082*		
No Change	.2249	.0085	
Increase	**		

* $p < .005$
** No disruptive behaviour was observed to increase following a desist.

The Tables clearly show that a significant relationship existed in the observation data for both years between the rate of desisting and effectiveness; teachers who desisted more frequently appeared to be less effective in that pupil misbehaviour in their classes was both less likely to decrease following their desist and in 1982, at least, more likely to increase following their desist. Analysis of the data does not provide immediate insights into underlying linkages in these relationships: teachers whose desisting was followed by increases in pupil misbehaviour had both low rates (12 disruptions/30 minutes) and high rates (23 and 29 disruptions/30 minutes); teachers with high rates of the no change category (say, greater than 25%) had both low rates of desisting (7 or 13 disruptions/30 minutes) and high rates (34 and 37 disruptions/30 minutes). What is identified by this finding is the possible existence of a 'management' trap as it seems, for some teachers in the sample, the more they managed the more there was to manage.

Observation data gathered in both years, while the children were in grade 3 and grade 4, supports White's hypotheses, in that it appeared that teacher desists were, on the whole, immediately effective, but that in some classes higher rates of desisting were associated with increases in pupil misbehaviour (1982) or with lower levels of observed lessening or cessation of the pupil transgression (1981 and 1982).

Discussion

The failure of the observation reported here to substantiate the expectations which the literature had built up with regard to classroom misbehaviour of disadvantaged pupils came as something of a surprise, although the few researchers who have systematically studied pupil classroom behaviour have not reported higher levels of disruption in low-income classrooms (e.g. Harvey 1980). The failure to substantiate

Mt Druitt teachers' perceptions of their pupils is even more intriguing and while it is fashionable in some quarters to discount teacher perceptions and explanations of their own classroom behaviour, it would be unwise to dismiss summarily these teachers' claims without investigation. How could the teachers hold opinions which did not match observed reality? Several suggestions arise in the research literature dealing with classroom disruption which would help to explain the apparent paradox, and observation derived from experience with the Mt Druitt schools can also be canvassed.

Harvey's (1980) study of second grade low-income classrooms in eight schools situated in a north-western population centre in the U.S. appears a particularly thorough investigation, with twenty days observation in each class. Harvey (1980:311) reported "measures of noisiness, destructiveness, noncompliance, negative physical behaviour, and negative student-peer interaction did not distinguish between low and high income classrooms". A measure of behaviours Harvey called "secondary self-stimulation" did, however, distinguish between the classrooms. These behaviours accompanied other activities Harvey termed "primary behaviours" and were seen by teachers (p.312) "as indicative of anxiety, embarrassment, frustration, boredom, hostility, and even heavy concentration". In the ethnographic observation of classrooms in the Mt Druitt Longitudinal Study during 1982 comment was made by observers that secondary self-stimulation was more readily apparent in Mt Druitt classrooms than in Contrast School rooms although no systematic measure of it was taken. Children were noted who ceaselessly rocked the chair, or who drummed pens or pencils on the desk, or who twiddled with their hair as they read or worked, amongst a great many other activities of the same type. Mostly those secondary behaviours did not appear to interfere with the completion of, or attention given to, the children's primary task. It may be that Mt Druitt teachers share the interpretation of secondary self-stimulation apparently held by the teachers in Harvey's study, viewing even attentive children as, somehow, off-task.

Of course, it was not only teachers who perceived higher levels of disruption in Mt Druitt classrooms. Early in 1981 casual observation by the Mt Druitt Longitudinal Study research team had alerted them to the possibility of frequent classroom disruption; the researchers shared the teachers' perceptions of the behaviour of the Mt Druitt children. It might be the case that the early observation, although casual, and the teachers' expressions of belief of greater classroom disruption gathered early in 1981 were both right *at that time*.

Mt Druitt children may have been more disruptive early in their third grade year. N.S.W. schools have been structured in the past so that a managerial and physical gap existed between the first three grades (K-1-2), known as Infants, and the later four (3-4-5-6), known as Primary. This arrangement applied in all the schools in the Longitudinal Study. There is a somewhat shared opinion that the primary school in N.S.W. is a more formal educational setting than the infants' school. Mt Druitt children expressed such an opinion when they were interviewed early in 1981, reporting a belief that different behaviour would be required of them following their graduation from the Infants to the 'big' school. It may be that the primary teachers found the behaviour of the third grade children unacceptable early in the year and worked systematically and successfully to change the pupils' inappropriate behaviours. This could explain the findings of no difference in the observed behaviour of disadvantaged children when compared to non-disadvantaged pupils at the end of the second term and the beginning of the third term (of a three term year) in 1981 and 1982.

Schools had been seen to take deliberate steps later in 1981 and 1982 to increase academic engagement and decrease rule transgression by their pupils. For Mt Druitt a

'bandwaggon' effect for an 'educational' innovation imported from the South Australian Department of Education had been noted. Each morning the school day began, in three of the five Mt Druitt Schools, with a 15-20 minute period of physical activity. Teachers reported the adaption of this strategy as a means of "decreasing pupil aggression", or "helping the children's concentration", or "tiring them out a little so they don't jump around as much in class" (private conversations with teache) and all teachers questioned seemed convinced that the physical activity was "helping the children's school work".

A concerted effort had also been made by primary schools in Mt Druitt to decrease rule transgressions by shedding the most noteworthy of their misbehaving children; two special 'acting-out' classes had been organised in centrally located schools and pupils from surrounding schools were sent to them on the recommendation of the school counsellor and the school principal. While no children from the Mt Druitt Longitudinal Study had been sent to such a class, their existence indicated something of the official view of misbehaviour held in the Mt Druitt area. None of the non-Mt Druitt schools had access to special 'acting-out' withdrawal classes.

Perhaps the non-existence of these special classes ensured that several particularly 'naughty' children located in non-Mt Druitt schools were retained within their local school and attended to by the normal teaching staff. The behaviour of a particular child enrolled at the higher socio-economic status near-city suburban school comes particularly to mind in this context. This boy seemed at times typical of the child with personality deficits pictured by those holding a 'clinical view', being quite out-of-control of the teacher, and lacking self control. While required work was often completed a constant and loud stream of commentary and jingles accompanied it, out-of-seat behaviour was frequent running and jumping about often seen and verbal aggression towards other pupils noted. At Mt Druitt this boy may well have been a candidate for removal to the withdrawal class. At his present school, the teacher accepted his behaviour with a benign complacency, explaining to an observer that she had a special warmth of feeling for the child because she admired the well developed sense of humour he possessed. His peers appeared to accept, and readily excuse, his behaviour; it did not noticeably distract them from their work.

This ability of the majority of children to continue to attend to learning tasks despite class disruption was observed in all classrooms. While no systematic record of the individual pupil's rate of initiation of disruption or off-task behaviour was maintained in either year, all observers reported a strong impression that disruptive behaviour which led to disruptive incidents was initiated by relatively few, five or six only, of the pupils in any class. Most children persisted with learning tasks with occasional short term non-serious off-task behaviour, such as observation of other pupils or quiet chatting with a nearby classmate, noted. If this belief was substantially accurate as a picture of pupil behaviour, it implies that teacher action to establish greater control of all pupils, or to further promote the already existing high levels of pupil self control, would not be overly difficult or too distractive of teacher attention to other of the variety of compelling teacher tasks. Our special education colleagues, who have demonstrated an admirable ability to teach pupils with no past record of attending behaviour to pay attention to learning tasks within a remarkably short period, come to mind in this regard.

Perhaps it is the case that those teachers who are notable in the sample observed for the relative low rates of occurrence of disruptive incidents and/or the low rates of observed pupil off-task behaviour have identified the small number of most likely disruption initiators and pay special, if subtle, attention to them. Such teachers, whom Kounin (1970) recognises elsewhere as 'with-it', appeared to exert little effort in maintaining a sense of peace, order and purpose in their classrooms.

The data derived via observation employing the DESIST instrument revealed a pattern of classroom disruption for each of the instructional contexts coded for each teacher. This information was extended by the complementary data derived from PROSE observation and, thus, enabled an identification to be made of those classes/teachers who diverged from the general pattern in the sample observed. Overall, the greatest mean level (88.9%) of on-task pupil activity was achieved in the whole class setting, as Rosenshine and Berliner (1978) had predicted. The mean on-task pupil activity achieved in the no pupil/teacher interaction context was next highest, at 84%, while the lowest level was recorded in the individual pupil/teacher interaction setting, at 80.3%.

1981 classes identified earlier as 1 and 16 achieved higher rates of on-task engagement than the mean level in all three settings. In class 1 the teacher shared jokes and songs with the pupils. The other class (16) was also a Mt Druitt group with a younger, female teacher notable both for a high level of commitment to the children of Mt Druitt, and to the cognitive development and extension of her class. On first viewing this teacher's style had appeared teacher-centred, formal, cold and demanding. Later in the year, when the systematic observation was taking place, it was noted that a great deal of subtle teacher support and interest was being conveyed to the children, they were responding with enthusiasm and creativity to the intellectual demands being placed upon them, and they were responding in a formal, 'well mannered' way to the behavioural expectations conveyed to them by a young teacher who had obviously captured the children's enthusiasm and regard. There was little about their class which matched the picture of disadvantaged children as painted in the literature.

In the same Mt Druitt school class 20 was located. There all three pupil on-task activity levels were lower than the mean level reported for the sample; class 20 being the single class with lower levels in all three settings. Other classes had lower levels in one or two but not three groups. Class 33, a Contrast School group, had a significantly lower level of on-task activity in the individual pupil/teacher interaction setting, while class 10, a Mt Druitt group, had a significantly lower level compared to the mean for the sample and to the respectably high levels in other settings in the same class, for the individual pupil/teacher interaction setting.

Speculation that in-service strategies to assist teachers raise the level of on-task activity amongst their pupils may need to be somewhat tailored to the individual teacher's pattern of strengths and weaknesses seems justified by results such as those. At a time when in-service teacher education activities are being curtailed in N.S.W. schools for financial reasons, and when teacher apathy with regard to in-service activity appears to be growing, the production of an in-service classroom management skills package which could be employed in a flexible and responsive fashion is called for. Alongside such planned experiences it might well be useful also to organise a program of informal visits and discussions between teachers of the same grade in the same schools.

In quite recent months in N.S.W., all Government schools have been required by their Director General of Education to "formulate a discipline policy". The printed information circulated amongst schools at the time of this directive advised that, as parents and teachers share responsibility for the development and education of children, parents should be involved, alongside teachers, in the development of the policy. Schools in the Mt Druitt Longitudinal Study appeared to take this request seriously and a series of meetings, surveys, seminars and discussions took place between teachers and parents in all eight schools. As far as the Longitudinal Study research team is aware, none of the policy statements developed as a consequence of these exercises alluded to the necessity for systematic development of the teachers' managerial skills as an integral part of a school's discipline policy.

As the data and the findings reported earlier clearly indicate teachers' skills in managing generally, and particularly in constructing classroom environments in which pupil on-task activity is maximised and pupil initiated disruption minimised, varied greatly between teachers. Such variation can be accounted for to some extent by characteristics of the pupils, such as their level of achievement prior to instruction, although this does not provide a full explanation. Additional variables must impinge upon the instructional setting to produce the observed variation reported here; teachers' skills and techniques, or their lack of them, must be taken into account as well as teacher characteristics, such as their "with-it"-ness. Teachers must be aided to: *first*, identify their managerial strengths and weaknesses; *second*, to accept responsibility for their personal, professional development; and *third*, to undertake steps necessary to improve their skills. If a systematic process such as that is not done, it remains too easy to evade accountability by the ruse of asking "what can you do with children like that, from families like those?"

Almost every time the Longitudinal Study team sets out to substantiate a hypothetised characteristic of the life, experiences, accomplishments, or background of the disadvantaged child, a myth is destroyed. There is, for example, no cumulative achievement gap in the tested outcomes of Mt Druitt disadvantaged children; their parents are strongly supportive of the schools and have high expectations of the outcomes of their child's schooling experience.

Disadvantaged children were not found, in the systematic observation reported here, to be any more, or any less disruptive in school than were the non-disadvantaged youngsters with whom they were compared.

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APPENDIX 1
Classroom Picture Information

Observer: Date: Time: Teacher: School: Class:

	Individuals	Pairs		Small Groups		Large Groups		All Pupils
		No. of Pairs	No. of Pupils	No. of Groups	No. of Pupils	No. of Groups	No. of Pupils	
Language Study								
Mathematics								
Reading								
Other Academic								
Other								

Off-task Pupil Behaviour Classroom Scan

Teacher Attending to	1. 1 2. 2 3. 3-6 4. 7+ 5. All	1 2 3 4 5

Pupil Behaviour	Tally	No
Off-task talk (whispering, social chat, note passing)		
Calling out of turn, rowdiness		
Observing or listening to others off task		
Verbal aggression towards other pupils		
Physical aggression towards other pupils		
Arguing, answering teacher back		
Play, fidget		
Tantrum		
Sulking		
Crying		
Passive, withdrawn		
Out of seat		

PUPILS' AND TEACHERS' EXPECTATIONS FOR THE ACHIEVEMENT OF YEAR 4 CHILDREN*

JILLIAN BELME

At present the performance of children at school is being closely examined by the public. It is therefore an appropriate time to investigate underlying processes which help to determine the level of pupils' achievement. It is widely accepted that the expectations of teachers and parents for children's school performance influence their attitudes to school and motivation to perform well. This paper examines both children's and teachers' expectations for performance on assessment tasks held at the end of the school year. All of these tasks were carried out as part of the Mt Druitt Longitudinal Study which has as its major concern the evaluation of the academic achievement of children in the primary school.

Previous results show that very young children (kindergarten–year 2) have uniformly high expectations for success at school (Entwisle and Hayduk, 1978), and that some junior high school pupils, particularly low achievers, have low expectation for success at school (Brookover *et al.*, 1967). At some point, experience of the education process forces children to have a more realistic appraisal of their chances for success at school. The data in the present study were collected from children in year 4 in primary school, an intermediate point between reports in the literature of high expectation and low expectation for children. Identifying the point at which children's high expectation begins to change to low expectation and describing the attendant conditions would be an important contribution to educational research.

This study is primarily interested in the expectations of children. The major questions asked about children's expectations are:

(a) are there any differences between the expectation levels of high and low achievers, and

(b) between boys and girls?

(c) how closely do the expectations of these groups of children match with their obtained scores?

(d) how closely do the children's expectation match with the teacher's expectation?

The major questions asked about teachers' expectations are:

(a) do teachers have different expectations for high and low achievers, boys and girls?

(b) how closely are the expectations of teachers matched with the children's actual scores, and the children's expectations?

Review of Expectation Studies

Teacher Expectations

Since Rosenthal and Jacobsen, (1968) enunciated the 'self-fulfilling prophecy' in relation to teacher expectations, many studies have attempted to document the existence of teacher expectation, i.e. a set of opinions held or inferences made by teachers about the present and future academic achievement of their pupils. Expectations concerning the classroom behaviour of pupils are also held by teachers

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(Brophy and Good, 1974). The unpalatable aspect of the self-fulfilling prophecy as reported by Rosenthal and Jacobsen was that a *failure expectation*, held by a teacher for certain pupils, could set up a complex chain of expectations and events, resulting in lowered performance levels for those pupils.

Although the original study was widely criticised and 'self-fulfilling prophecies' have been difficult to replicate experimentally, an overall assessment of 300 expectations studies carried out both in classrooms and laboratory situations have confirmed an expectancy influence on subject behaviour (Cooper, 1979). Where studies reported expectation data of individual teachers, 70% showed means in a direction confirming expectation influence (Cooper, 1979). However, the evidence has been inconclusive enough to lead reviewers to admit that expectation effects do not always occur and that they seem to be dependent on the teaching philosophy and teaching style of the teacher (Brophy and Good, 1974).

The nature and direction of the relationships of teacher expectation and pupil achievement has not been resolved. Thus, it is now doubted that inaccurate teacher expectancy can substantially alter student performance as implied by the 'self-fulfilling prophecy' doctrine (Cooper, 1979).

School practices can affect teachers' expectations, with streaming tending to lower teacher expectation and retarding the academic achievement of low socio-economic status and/or low achieving pupils, (Barker Lunn, 1970). This effect was noted not only for individual pupils but for whole classes of pupils. Moreover, school events early in the child's school life can promote the development of patterns of teacher and child expectations that are potentially debilitating for low achievers (Rist, 1970; Entwisle and Hayduk, 1978). Recent research opinion is that it is probably impossible to raise or lower teacher expectation artificially and to have these effects carried through into pupil performance (Cooper, 1979). However, naturally formed teacher expectations can serve at least to maintain pre-existing achievement levels among pupils (Dusek and O'Connell, 1973; Rist, 1970), or to alter the performance of pupils who base their own expectations on perceived teacher expectations (Brattesani, *et al.*, 1981).

The central problem in determining the impact of teachers' expectations on pupil achievement is the inability to show causal direction in teacher expectation effect, i.e. teachers' expectations may be influenced to some extent by previous performance by the child. It has been argued that evidence was evenly balanced as to whether student achievement causes expectation, or whether the expectation causes achievement (West and Anderson, 1976). More recent research, however, has shown that teacher expectation and behaviour account for variance in academic attainment over and above that explained by previous achievement (Brattesani, *et al.*, 1981).

Children's Expectations

In the area of children's expectations of success, it has been hypothesised that repeated failure is evaluated by the child and results in decreased expectancy, while repeated success leads to raised expectation. For very young children in kindergarten this does not appear to be the case for, despite repeated failure, some low achieving children have maintained very high expectations until the end of Year 2 (Entwisle & Hayduk, 1978). High achieving children, on the other hand, modified their expectations over time, until at the end of year their expectations were much more in line with their actual performance.

Sex Differences in Expectations

Numerous studies have examined sex differences in children's expectations with the hope of explaining different achievement patterns shown by girls and boys. There is accumulating evidence that girls have lower expectancy of success than boys (Parsons, *et al.*, 1976; Maccoby and Jacklin, 1974; Dweck and Guillard, 1975). Present research has suggested that the expectancy patterns of girls were more unpredictable (Parsons *et al.*, 1982) and that statements of low expectancy in boys were followed by increased persistence, whereas girls showed decreased persistence following low expectancy statements (Dweck and Guillard, 1975).

Method

The subjects in the study were 60 Year 4 pupils enrolled at Sydney schools. Of the children 30 were labelled as 'high achievers' and 30 children were 'low achievers'. The 30 high achieving children were randomly selected from pupils who scored within the top 25% of the Mt Druitt Longitudinal Study sample, who completed the A.C.E.R. Primary Survey Reading Test, Comprehension Level A Form R. This test was administered in November 1981, when the children were in Year 3 of primary schooling. The 30 low achieving children were randomly selected from pupils who scored within the bottom 25% on the above test. Boys and girls were equally represented in both achievement groups.

The study of teachers and pupils expectancies was part of a larger study which also examined children's attributions for success and failure in academic situations at school. Only data directly relating to expectations is reported here. Children were interviewed individually in July-August, 1982. The teachers of the children, again individually with the interviewer, filled in a set of expectations for the children's performance at the end of the year, using exactly the same format for answers as the children. Teachers were not, of course, informed of the children's expectations.

Children and teachers were asked to rate, on a ten point scale, ranging from 1-10, the mark that they expected to get (or expected the child to get) at the end of the year in tests administered by the Mt Druitt Longitudinal Study in reading comprehension, spelling, mathematics and written expression. Care was taken to ensure that the child understood what the tasks were and when they would be given. Teachers were asked to assess the children in relation to their classmates, rather than as members of a sample of wider abilities.

Results

It was hypothesised that high achievers would have high expectation for success on the assessment tasks given at the end of the year, and that these would be reflected in high predicted marks in reading, spelling, mathematics and written expression. Conversely, low achievers were expected to predict lower levels of success than the high achievers. Children were asked to predict 'out of 10' the mark they would get at the end of the year on reading, spelling, mathematics and written expression. The data were analysed to investigate possible differences in expectation between girls and boys, where, on the basis of previous research reported in the literature, any significant difference obtained was expected to indicate lower expectations for success in girls. Similarly, teachers were expected to predict higher marks at the end of the year for high achievers than low achievers. It was not anticipated that there would be any differences in teachers' expectations for boys and girls.

It was also expected that high achievers would have higher expectations for academic success and that their prediction would be more accurate, i.e. closer to their obtained scores than the predictions of the low achievers. The greater variability among the low achieving group in performance in test in 1981 in reading and mathematics, strengthened this expectation. Accurate prediction seemed an easier task from the consistently high performance base shown by the high achievers, than the more variable performance base of the low achievers. It was not expected that there would be any difference between boys and girls in accuracy of prediction.

Teachers were expected to be more accurate than the children in their predictions of the end of year performance of the sample. Teachers' predictions were expected to be accurate regardless of the achievement level or sex of the children.

At time of writing, a full set of data, i.e. children's and teachers' predictions and obtained scores, were available only for reading, and these data were analysed by MANOVA. For the remaining curriculum areas spelling, mathematics and written expression, differences in children's and teachers' expectations were analysed separately using separate samples t-tests.

The data on children's predictions, teachers' predictions and reading scores were analysed by 2 x 2 MANOVA. There was a significant main effect for achievement ($F = 59.2$, $df = 3/49$, $p = .000$) by Wilks' Lambda criterion. The multivariate values for sex ($F = 2.46$, $df = 3/49$, $p = .073$) and for the interaction of achievement and sex ($F = .879$, $df = 3/49$, $p = 0.458$) were not significant.

The univariate tests of significance for the main effect for achievement are set out in Table 1.

Table 1. Achievement Differences in Expectations and Performance in Reading

Dependent Variable	*Univariate Tests of significance*		
	df	*f*	*p*
A.C.E.R. Comprehension	1/51	179.02	0.000*
Children's Prediction	1/51	0.04	.836
Teachers' Prediction	1/51	35.50	0.000*

* $p < .05$

As expected, high achievers obtained significantly higher scores than low achievers on the standardised reading test. This result confirms the accuracy of the sampling process used for the study. Teachers predicted significantly higher marks at the end of the year for high achievers than low achievers. This result was also expected. However, there was no significant difference between the expectations of high achieving and low achieving children for reading performance.

The data relating to both children's and teachers' expectations for high and low achievers, and boys and girls in curriculum areas other than reading, were analysed by a two samples t-test. There was no difference in expectations between high and low achieving children on any of the curriculum areas tested (Spelling $t = 1.42$, $p = .160$, mathematics $t = 1.40$, $p = 1.66$; written expression $t = 83$, $p = .412$). Teachers distinguished very clearly between high and low achievers in their expectations for success. Significantly higher expectations were expressed by teachers for high achievers than low achievers in all curriculum areas. (Spelling $t = 5.80$, $p = .000$, mathematics $t = 5.06$, $p = .000$; written expression $t = 4.62$, $p = .000$). There were no differences in teachers' expectations for boys and girls.

It is worth noting that, while the multivariate tests for sex as a main effect were not significant, the univariate analysis indicated that there was a significant difference in children's expectations for reading, where girls had significantly higher expectations than boys ($F = 6.41$, $df = 1/51$, $p = .014$).

At time of writing, end of year scores were available only for reading, and data showing the accuracy of teachers and children's predictions in relation to obtained scores in reading are presented in Table 2.

Table 2. Accuracy of Children's and Teachers' Predictions for Reading

Group	*N*	*Children*		*Teachers*	
		r	*p*	*r*	*p*
Whole group	60	.0134	.461	.6701	.000*
High Achievers	30	.3999	.014*	.6886	.000*
Low Achievers	30	−.2064	.161	.6778	.000*
Boys	30	.0667	.371	.4291	.009*
Girls	30	−.0398	−420	.2156	.150

* $p < .05$

These results indicate that high achievers were significantly more accurate in predicting their end of year score than were low achievers. This result was in the expected direction. Generally, teachers predicted very accurately the scores obtained by the whole group in reading ($r = .6701$, $p = .000$). The correlations obtained for both the high and low achieving groups were highly significant. The teachers were least accurate in predicting girls' end of year reading scores; a result which was not predicted. Examination of the data indicated that, while teachers predicted that low achieving girls would obtain higher scores than the low achieving boys in the reading test, the reverse result occurred.

From the results already presented, it would be predicted that there is a closer match between the expectations of the high achievers and their teachers than between the low achievers and their teachers. The Pearson product moment correlations for this data are shown in Table 3.

Table 3. Teachers' and Childrens' Predictions

Curriculum Area	*High Achievers (N=30)*		*Low Achievers (N=30)*	
	r	*p*	*r*	*p*
Reading	.3715	.022*	.0494	.396
Spelling	.3990	.014*	−.0173	.464
Mathematics	.6615	.000*	.3330	.036*
Written Expression	.2815	.066	.1098	.282

* $p < .05$

The relationships between teachers and children's expectancies were significant for reading, spelling and mathematics for high achievers, and for mathematics for low achievers. High achievers had expectancies more closely matched with the teachers than low achievers. This is shown by the higher 'r' obtained by high achievers than low achievers in all subject areas. However, the match of the low achievers expectations for their result in mathematics with the expectations of their teachers reached significance. It appears that low achievers had a more realistic appraisal of their level of performance in mathematics.

Two factors may be influencing this result. Firstly, the feedback given for mathematics is often a concrete piece of information, a mark, which can be precisely verified by the child. It is hard to be mistaken about the level of performance obtained in mathematics. Secondly, the mathematics test used was a criterion referenced test, which the whole group, but especially the low achievers, might have recognised as being very similar to the exercises done routinely in class.

Discussion

From the results presented in this study of Year 4 children, both high and low achievers expect to get high marks in assessment tests given at the end of the year in reading, spelling, mathematics and written expression. Other researchers (Entwisle and Hayduk, 1978) have found that low achievers on beginning school and at the end of Year 2 have very high expectations for success at school, even if in the meantime they have received low marks. This study has found that their high expectations endure to at least Year 4.

High achievers appear to be better attuned to the feedback that forms expectations, i.e. the school, the teacher and their own performance. Their accurate predictions for their end of year mark and the close relationships that their expectations have with those of their teachers indicate their accurate, tightly formed evaluation of performance at school. They have formed the beginnings of an accurate cognitive map of school processes and the information that they convey to them.

The low achievers, on the other hand, have unrealistically high expectations for their success at school. The process of sample selection showed that low achievers have a variable range of performance in reading and mathematics, i.e. they did not necessarily get low marks in both. Some low achievers would realistically expect to get higher marks in some subjects than others.

However, their expectations were extremely high, higher than this explanation would suggest. It is interesting that the low achievers' predictions were closest to their teachers' on the mathematics test which is a criterion-referenced test. Reading performed was assessed by a norm-referenced test. It appears that low achieving children are more readily able to assess their performance on tasks directly related to classroom content for which there is concrete feedback. Although many of the low achievers in this sample do end of year norm-referenced tests they may not be given feedback in a form that helps them assess their performance realistically. Perhaps they are not given feedback at all on this type of task.

At what point in their school careers do the low achievers come to have a more realistic assessment of their abilities to perform at school? Perhaps a change begins to occur when low achievers are forced to accept their low performance on tests that all children in their age/grade level complete, i.e. either yearly examinations or standardised tests. At secondary school, their results are usually known to the students who can make direct comparisons. Removed from the assessment framework of the primary classroom, the existence of a wider range of abilities becomes obvious.

The literature suggest that the formation of children's expectations is a complex process involving teachers, parents and perhaps other children. It is in the children's interests to have a realistic set of expectations which can motivate constructive efforts to improve academic performance at school. There is a role for teachers in assisting children develop these important understandings, by developing methods of feedback which help the children understand the level of their performance, and develop realistic goals and work patterns to achieve them.

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RELATIONSHIPS BETWEEN FAMILY CHARACTERISTICS AND PRIMARY SCHOOL RELATED OUTCOMES*

ANNE CLARK AND PETER O'BRIEN

Measures of the family's social environment for children have been found to account for a greater proportion of the variance in the outcomes of tests of intellectual ability and school achievement than any single variable or variable set other than that accounted for by parent ability — child ability relationships. Indeed, in the sixties and seventies a major criticism of the ability of schools to create environments which promoted and sustained learning was fuelled by evidence from a series of major studies of the overpowering effects of family background and family environment upon children's achievement measures. The Equality of Education Opportunity Survey in the United States, for example, raised serious doubts in 1966 about the ability of the school to contribute to student achievement while evaluations of Head Start and Follow Through type programs, both in the United States and here in Australia, have demonstrated the inability of schools to produce sustainable effects over and above those related to the child's home background and parental ability.

Despite the long-term and wide-spread recognition of the importance of the family for children's achievement it is a fact, however, that "a relatively small number of educational researchers have included detailed assessments of family environments in analyses of children's school outcomes" (Marjoribanks, 1979:1). Studies which have investigated family environments have often been marred in the past by small samples, with 60 being the most common sample size, or restrictions to the range of characteristics represented within the sample. Generalizations from such studies have been limited and Marjoribanks (1979:45) has shown that with larger samples the moderate to high relationships between the family environment and achievement measures of the small sample studies are not replicated. In a larger scale study with a sample of 918 Australian families Marjoribanks (1979:56) was able to show only modest associations "although the relationship of social background measures with academic achievement scores were strongest, while the relations to intelligence and affective characteristics were of a lower order". It may be that in some circumstances the proportion of variance in school related achievement tests scores over which the school has some influence could be greater than suggested by earlier studies with family background proving a relatively weaker predictor.

Marjoribanks in his 1979 study and in earlier studies made a distinction between what he termed, "environmental forces" and other environmental measures such as social status indicators and family structure variables. Bloom (1964) had earlier defined the environment as "the condition, forces and external stimuli that impinge upon the individual" and had conceived of various sub-sets of the total environment, or "sub-environments" which act upon specific human characteristics. Presumably Marjoribanks' use of the term "environmental forces" overlaps with Bloom's and the terms social status and family structure indicators can be equated with Bloom's use of the term conditions. Of particular interest in family or school environment-achievement relationship research is the identification of those sub-environments, those environmental forces and conditions, which help to shape the child's learning.

The Mt Druitt Longitudinal Study, of which this research formed part, included in its sample children from a wide variety of home backgrounds. Tracing the effect of these environments upon school performance was an important element in a study which was attempting to delineate how 'disadvantage' functioned for Australian children.

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Included in the Longitudinal Study sample were children, for example, from poverty or from single parent families or of Aboriginal descent or of migrant backgrounds, as well as children from advantaged circumstances. Identification of any effects upon academic performance or affective development of sub-environments related to such background characteristics was of importance if children's academic or personal growth were to be maximised. Burns and Brassard (1982:487) have claimed, for example, that children from single parent families suffer "an increased risk for ... poor academic achievement", basing their claim on the children's experience of "higher levels of anxiety, especially as the result of financial difficulties".

Approximately one third of the total Mt Druitt Longitudinal Study sample of children came from families whose sole source of income was from social welfare payments and who lived, therefore, with incomes below the recognised Australian poverty line. Following upon Burns and Brassard's reasoning it might be expected that all these children would be 'at risk'.

Although general, broad measures of parental income levels and occupational status have been shown, as Burns and Brassard claim, to be related positively and consistently to children's achievement, measures of specific home environment forces (or factors or processes: terminology, although interchangeable, appears to depend upon the personal predilection of the individual researcher) have been shown to be more strongly related to achievement (e.g. Bradley *et al.*, 1977:699). It was the environmental processes which make up the "learning sub-environment" which were of special interest in the Mt Druitt Longitudinal Study, as even within the Mt Druitt located subsample, chosen for their homogeneity upon social status or social condition measures, a wide range of achievement outcomes could be noted. Such variation may be amenable to explanation given information with regard to environmental forces or processes established within the children's family or school environments. Could it be that high achieving Mt Druitt children, from disadvantaged, low social status backgrounds, share specific home processes with high achieving pupils from non-disadvantaged backgrounds? Or, might it be that with some children the school's role is a more important one?

Marjoribanks (1974:128) has identified a set of eight home related environmental forces from a review of the relevant literature, which he postulated were related to child school performance. Six of these forces were labelled as presses, including press for achievement, activeness, intellectuality, independence, English, and home language other than English. The remaining two forces were named as father dominance and mother dominance. In studies of the relationship of these eight forces with achievement a structured interview was employed by Marjoribanks to elicit responses from both parents and each item was scored — in a relatively subjective fashion — by the interviewer so as to produce a score for each of the environmental forces.

Of the status factors or environmental forces for which measures became available in the Mt Druitt Longitudinal Study, significant correlations were found for all but parental aspirations, when Marjoribanks related these variables to achievement measures in two studies. In a reworking of data collected for the Plowden Committee in the United Kingdom, or in original studies in Canada and Australia, Marjoribanks found relationships illustrated in Table 1. The correlations recorded for the environmental forces (.53 to .66) clearly are greater than those for the conditions (.20 to .35) as had been suggested.

Given the size of the sample within the Mt Druitt Longitudinal Study (some 900 children and their families) plus the necessity to establish a set of information for each family it was not possible to conduct lengthy interviews with each parent. Within a questionnaire, modelled to some extent on Marjoribanks' structured interview, it was possible, though, to tap out social conditions and some important aspects of the

Table 1. Correlation Coefficients for Social Status and Family Environment Measures Related to Achievement Measures

Variable	*Study*	*Verbal Measures*	*Numerical Measures*
Father's Occupation	Plowden	.36	.33
	Marjoribanks '74	.29	.27
Father's Education	Plowden	.33	.32
	Marjoribanks '74	.43	.30
Ethnicity	Marjoribanks '74	.35	.21
Housing (incl. crowding)	Plowden	−.28	−.20
	Marjoribanks '74	−.34	−.34
Press for Achiev.	Marjoribanks '74	.66	.66
Press for Intell.	Marjoribanks '74	.612	.53
Parental Aspiration	Marjoribanks '74	.06	.08

home environmental forces. Questions had to be limited to those which could elicit a direct response from the responding parent, however, as questions permitting interpretation may have produced a variety of unknown shifts in meaning in the responses given. A questionnaire, developed in the first instance as a structured interview with later transformation into a self-administered instrument, was adopted to elicit information with regard to social status indicators, family structure characteristics, ethnicity and the environmental forces of family expectations and family intellectuality. All five factors had been shown by previous research to be related to child achievement and/or affective measurement scores. The model being pursued in the Mt Druitt study, in which social status and social-psychological family environment variables were being related to cognitive and affective outcomes, was an example of one possible model for research on family background-school related outcome relationships. Marjoribanks (1979:55) had identified six possible models.

Of great interest within the Mt Druitt Longitudinal Study was the identification for Australian children of the meaning and functioning of 'disadvantage'. In pursuit of this interest the patterns of relationships for two sets of children, the Mt Druitt children and those from non-disadvantaged backgrounds, could be compared, and the pattern of relationships for the higher achieving children in Mt Druitt compared both to the general Mt Druitt pattern and that of the non-disadvantaged children in an attempt to identify any differences in the patterns of relationships.

It was hypothesized that the strength of relationship between social status indicators, family structure characteristic, environmental forces and school achievement depends on the socio-economic status of the sample. It was expected that low socio-economic status children's achievement might not be as closely related to social status and family structure factors as it is with higher socio-economic status children and could, therefore, provide an opportunity for the school to have greater influence upon child achievement.

Method

The data used in this study were collected in 1981 as part of the Mt Druitt Longitudinal Study (MDLS). The child sample comprised the entire Year 3 cohort at seven state primary schools in New South Wales. Five of the schools, all located in the

Mt Druitt area forty kilometres west of the Sydney central business district, had previously been participants in the Mt Druitt Early Childhood Project (MDECP) between 1977 and 1980. In 1981 the MDECP was increased by the addition of three 'contrast' schools to become the MDLS sample. Data are included in this report from two of these contrast schools, one being located 55 kilometres west of the Sydney central business district, the other a mere five kilometres across the harbour from the city centre. In general terms Mt Druitt is a low socio-economic status area where mean school achievement levels are low, while the two contrast schools are in higher socio-economic status areas and mean school achievement levels are high. The Mt Druitt and contrast samples are discontinuous with respect to school achievement levels; this fact persuaded the researchers not to pursue structural analyses (such as path analysis) of the data sets combined.

Four achievement tests and one measure of locus of control were administered to over eight hundred children and a detailed home environment questionnaire was sent home to their parents. Despite an excellent overall response rate from parents of approximately 70%, complete data sets were available for only 278 children. The reduction in numbers arose largely from the failure of many parents to answer all the items in their questionnaire.

The final sample included in the analyses comprised 192 Mt Druitt children and 86 contrast children, both sets having approximately equal numbers of boys and girls with an average age of nine years.

The four achievement tests administered were a custom-designed criterion-referenced test of mathematics (covering the content of the infants' school mathematics curriculum), the ACER Word Knowledge Test and Comprehension Test (both at Level A, Form R) and the Schonell Spelling Test, the latter three being standardised norm-referenced tests. The Internalisation of Achievement Responsibility Questionnaire (IARQ) was used to assess the extent to which children accepted responsibility for their classroom related successes and failures.

The home environment questionnaire variables indicating social status were mother's education, father's education, friends' and relatives' education, a crowding index, home ownership, family income and father's occupation. The family structure variables were the intactness of the nuclear family, number of parents living with the child, the number of guardianship changes the child has experienced and the length of time the child has been living in its present circumstances. Intellectuality press indicators included an assessment of the type of newspapers and magazines available in the home, the extent to which the child was and is read to by other members of the family, the child's television viewing habits, the amount of help given with homework, the availability of an encyclopaedia in the home and the frequency with which books are borrowed by the child from a library or friends.

Table 2. Means and Standard Deviations for Achievement Tests and IARQ Scores

Measure	*Mt Druitt Schools* $N = 192$		*Contrast Schools* $N = 86$	
	$\bar{X}$	s.d.	$\bar{X}$	s.d.
Schonell Spelling	39.72	12.62	53.63	11.54
Mathematics	75.89	18.80	93.93	7.60
ACER Word Knowledge	18.32	7.99	30.53	7.11
ACER Comprehension	15.03	6.58	25.56	6.02
IARQ — Success	6.88	1.68	7.69	1.51
IARQ — Failure	5.71	2.12	6.57	2.04

Parental expectations drew together both mother's and father's expectations about present grades, grades in high school and the highest level of education the child would reach. The ethnicity of the family was judged on the basis of where each parent was born, where each parent was educated, how long the parents had lived in Australia and the number of languages spoken in the home.

The means and standard deviations for each achievement test and the IARQ subscores for successes and failures are shown separately for Mt Druitt and contrast schools in Table 2.

The variance in home environment variables for each group was compared and found to be sufficiently similar to allow a comparison of the zero order correlations between achievement scores and home environment variables for the two groups without fear that one set of correlations may be being reduced by lack of variability. Variances of key home environment variables are given for each group in Table 3.

Table 3. Variances for Home Environment Variables for Each Group

	Contrast Sample		*Mt Druitt Sample*	
	$\bar{X}$	*s.d.*	$\bar{X}$	*s.d.*
Mother's Education	4.52	1.69	6.31	1.06
Father's Education	3.63	1.95	6.15	1.16
Home Ownership	2.00	.41	1.58	.64
Father's Occupation	5.15	3.78	9.97	3.08
Parental Expectations	2.15	1.33	3.43	1.31

Table 4. Interrelationships Between Gross Indicators of the Home Environment (Conditions) and School Achievement/Locus of Control for Mt Druitt Sample (n = 192)

	Spelling	*Maths*	*Word Knowledge*	*Comprehension*	*IARQ Success*	*IARQ Failure*
Mother's Education	.11	.16	.14	.24**	.05	.01
Father's Education	.02	.07	.04	.12	.03	.00
Education of family friends	−.03	.10	.03	.02	−.08	.08
Education of relatives	.07	.01	.09	.06	.08	−.06
Crowding ratio of home	.09	.00	.09	.04	.04	.06
Home Ownership	.18*	.21*	.24**	.28**	.13	.00
Family Income	.09	−.02	.10	.00	.00	−.02
Father's Occupation	.17*	.14	.18*	.19*	.10	.06
Nuclear Family	.08	.03	−.01	−.13	−.03	.00
Number of parents	.04	−.12	.05	.04	−.05	−.12
Number of guardianship	−.06	.00	.02	.14	.07	.03
Time in present family	−.03	−.08	.03	.11	.00	−.08

* $p < .01$
** $p < .001$

The correlations between the gross indicators of family social condition (social status and family structure) and achievement are presented in Table 4 for Mt Druitt children and in Table 5 for contrast children.

Table 5. Interrelationships Between Gross Indicators of the Home Environment (Conditions) and School Achievement/Locus of Control for the Contrast Sample (n = 86)

	Spelling	*Maths*	*Word Knowledge*	*Compre-hension*	*IARQ Success*	*IARQ Failure*
Mother's Education	.24	.19	.30*	.33**	−.08	−.09
Father's Education	.24	.31*	.35**	.40**	−.05	.08
Education of family friends	.24	.28*	.30*	.30*	.04	.11
Education of relatives	.15	.11	.23	.25*	.08	.08
Crowding ratio of home	.20	.22	.12	.20	.04	.21
Home Ownership	.08	.10	.08	.13	−.08	.20
Family Income	.08	.08	.01	−.01	−.11	.09
Father's Occupation	.22	.32*	.38**	.39**	.04	.16
Nuclear Family	.06	.28*	.05	.04	.20	.09
Number of parents	−.02	.10	−.06	−.09	.22	.10
Number of guardianship	.06	.28*	.05	.04	.20	.09
Time in present family	.14	.31*	.08	.12	.04	−.03

* $p < .01$
** $p < .001$

It should be stated that none of the relationships for either group is strong with correlation coefficients for the contrast group reaching about the same level as Marjoribanks had found earlier in Australia although the coefficients for the Mt Druitt children are much lower with fewer reaching significance.

Contrast Schools

For children in the contrast schools father's education, mother's education, father's occupation and parental expectations, themselves interrelated, show the strongest relationships with achievement.

The correlations in Table 6 are very similar to those reported by Marjoribanks (1974). Mother's and father's education bear a similar relationship to three of the four

Table 6. Strongest Relationships for Contrast Schools

	Father's Education	*Mother's Education*	*Father's Occupation*	*Parental Expectations*
Schonell Spelling	.24	.24	.22	.30*
Word Knowledge	.35**	.30*	.38**	.49**
Comprehension	.40**	.33**	.39	.44**
Maths	.31*	.19	.32*	.21
Parental Expectations	.49**	.37**	.38**	
Father's occupation	.55**	.41**		
Mother's education	.54**			

* $p < .01$
** $p < .001$

achievement measures (spelling, word knowledge and comprehension) but father's education is more strongly related to mathematics achievement than is mother's education. The intactness of the nuclear family moreover, makes no difference for spelling, word knowledge or comprehension (all correlations very close to zero) but is significantly related to maths achievement (see Table 5).

Father's help with homework is negatively related to word knowledge and comprehension, i.e. the more the father helps, the lower the achievement. This is perhaps explained by assuming that fathers do not usually help with homework, but are more likely to do so if the child is not doing well at school.

Mt Druitt Schools

The significant relationships are fewer and weaker for children in the Mt Druitt sample (Table 7) compared with those for the contrast children and with Marjoribanks' findings. Mother's education, father's education and father's occupation are still interrelated but of these, for this group, mother's education only is related to parental expectation.

Tables 7. Strongest Relationships for Mt Druitt Schools

	Father's Education	*Mother's Education*	*Father's Occupation*	*Parental Expectations*	*Home Ownership*
Schonell Spelling	.02	.11	.17*	.19*	.18*
Word Knowledge	.04	.14	.18*	.30**	.24**
Comprehension	.12	.24**	.19*	.32**	.28**
Maths	.07	.16	.14	.32**	.21*
Home Ownership	.30**	.17*	.27**	.07	
Parental Expectations	.07	.23**	.13		
Father's occupation	.37**	.26**			
Mother's education	.44**				

* $p < .01$
** $p < .001$

Parental expectation is related to the children's achievement, almost to the same extent as it was for the contrast group, but of the other three (mother's education, father's education and father's occupation), which were as strongly related to achievement as parent expectation for the contrast group, only father's occupation shows a significant correlation with achievement and even that is at a very much lower level.

Home ownership, related to both parents' education and to father's occupation is also related to achievement, but not to parental expectation. There are three categories of home ownership, renting, buying and owning outright; in Mt Druitt renting can be equated with 'housing commission'. It may be hypothesised that these Mt Druitt families who chose to buy or who have bought their property may also create home environments which differ from Mt Druitt families content to rent their homes.

Parent expectation is related to ethnicity, migrant parents having higher expectations for their children than Australian born and educated parents (Table 8). These higher expectations are not matched, however, by their children's achievement levels as is evidenced by the lack of relationship between ethnicity and children's achievement.

Table 8. Interrelationships Between Measures of Family Ethnicity and School Achievement

	Where mother was born	*Where father was born*	*Where mother educated*	*Where father educated*	*Number of languages spoken*	*Parental Expectations*
Spelling	.10	.11	.06	.06	.11	.19*
Work knowledge	.06	.07	.06	.05	.07	.30**
Comprehension	.09	.05	.01	.00	.02	.32**
Maths	.10	.06	.05	.03	.05	.32**
Parental Expectation	.26**	.32**	.20*	.21*	.24**	

* $p < .01$
** $p < .001$

The discrepancy between the degree of relationship between mother's and father's education and children's maths achievement observed in the contrast group is not present for the Mt Druitt group. The intactness of the nuclear family is similarly unrelated to maths achievement for this group. This is, of course, a most important finding. Children from single parent families do not, despite evidence from the United States, appear to suffer detriments in their educational achievement. Conversations with single parents in both Mt Druitt and the contrast school groups leads to a suspicion, however, that the children's success may be being bought at the expense of their parents' opportunities to relax and their freedom from anxiety.

Mother's help with homework is negatively related to spelling and word knowledge as was father's help for word knowledge and comprehension for the contrast group. Again this may well reflect mothers helping children because they are not coping at school.

For neither group was there any relationship between children's achievement levels and crowding index of home, family income, single versus two parents, ethnicity of parents, being read to by either parent, the newspapers available in the home or the amount of television viewed before or after school each day.

Locus of control (IARQ) was unrelated to any of the other measures for the contrast group and was related to achievement only for the Mt Druitt group (Table 9).

Table 9. Relationship between IARQ and Achievement

	IARQ — Successes		*IARQ — Failures*	
	Mt Druitt	*Contrast*	*Mt Druitt*	*Contrast*
Spelling	.28**	.12	.19*	.24
Maths	.33**	.12	.15	.10
Work Knowledge	.32**	.06	.15	.02
Comprehension	.38**	.09	.19*	.10

* $p < .01$
** $p < .001$

It is clear that for Mt Druitt children, home environment as measured by social status indicators, plays a much smaller role in determining school achievement levels as measured in this study. A proportion of the Mt Druitt children (those in 'A' stream

classes) are achieving at levels quite comparable to those in the contrast schools (see Table 10) but still have family characteristics closely matching those of the total Mt Druitt sample. It would appear that schools may be far more important in determining relative achievement levels for 'disadvantaged' children in the sample than was the case for advantaged children. This may also explain the stronger relationship between IARQ and achievement for Mt Druitt children than for contrast children. The home environment effects for contrast children appear to be 'overriding' any relationship between IARQ and achievement whereas the higher achieving Mt Druitt children are those who have also internalised to a greater degree a sense of responsibility for their own achievement. The higher achieving Mt Druitt children share the internalisation of responsibility to the same level as the highest achieving children in the contrast school.

Table 10. Comparison of Achievement Levels and Family Background Characteristics.

	Mt Druitt All $n = 192$		*Mt Druitt 'A' Streams* $n = 66$		*Contrast* $n = 86$	
	$\bar{X}$	*s.d.*	$\bar{X}$	*s.d.*	$\bar{X}$	*s.d.*
Spelling	39.72	12.62	51.06	11.39	53.63	11.54
Maths	75.89	18.80	88.82	13.12	93.33	7.60
Work Knowledge	18.32	7.99	25.94	5.28	30.54	7.11
Comprehension	15.03	6.58	20.74	5.39	25.56	6.02
IARQ-Success	6.88	1.68	7.77	1.39	7.69	1.51
IARQ-Failure	5.71	2.12	6.36	2.07	6.57	2.04
Mother's Education	6.31	1.06	6.17	1.09	4.52	1.69
Father's Education	6.15	1.16	5.99	1.22	3.63	1.95
Father's Occupation	9.97	3.08	8.96	3.17	5.15	3.78
Parental Expectations	3.43	1.31	3.09	1.38	2.15	1.33

The similarity of the high achieving Mt Druitt children on the IARQ measure to children in the outer city higher socio-economic status area particularly is of great interest. Although these outer city children were the highest achieving in the sample, and came from expensive, well-resourced homes, their parents' levels of education achievement was only slightly higher than that of Mt Druitt parents. These outer city families were classic examples of 'upwardly socially mobile' groups, determined and persistent in their endeavours to succeed. The achievements of the children of these homes, but not their acceptance of responsibility for their successes and failures, were related to both their social condition and an environmental force; parental expectations. For the Mt Druitt high achieving children neither their achievements nor their acceptance of responsibility were related to either social conditions or family environmental force, as measured. The pattern of the relationships of the IARQ responsibility measure with achievements differed for the two groups of children, with IARQ successes and some IARQ failures being related significantly to achievement in Mt Druitt although there were no such relationships with the outer city higher socio-economic status group of children. One positive interpretation of these findings might be that the school experience of higher achieving Mt Druitt youngsters is very important to their success and acceptance of responsibility while the home experiences and family background of the outer city children is sufficient to sustain high levels of achievement. Of course it might also be the case that unmeasured aspects of the children's family-based experience is of equal importance

to both groups. It is certainly the case however, that within the Mt Druitt 'disadvantaged' groups of children a different pattern of interrelationships between the variables of interest in the study were found when compared to non-disadvantaged groups elsewhere. It is also the case that within Mt Druitt a substantial group of competent youngsters were identified and these children, sharing a similar social background and environmental circumstances as measured with lower achieving Mt Druitt children, could also be distinguished by their greater measured acceptance of responsibility for success and failure. For the majority of children within the total Longitudinal Study sample home background characteristics are vital for their observed level of achievement; for one substantial group of higher achieving Mt Druitt children, however, school experience appears to be particularly important as well.

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APPLICATIONS OF NEED-PRESS THEORY IN THE STUDY OF AUSTRALIAN EDUCATIONAL ENVIRONMENTS

J.M. GENN

Introduction

The purpose of this paper is to describe some work that has been done in Queensland in the last decade or so, which has focused on the nature of educational environments and their influence on their inhabitants. This work has been based on what has come to be called need-press theory, a rather esoteric term to describe what is, at the same time, a readily understandable and potentially powerful way of conceptualising, measuring and explaining what happens to students in schools, colleges and universities.

After a brief account here of the need-press theory itself, a sample of actual researches will be described in an educationally interesting and relatively non-technical manner, so that educators and educational administrators may readily appreciate the nature and scope of the work and its potential relevance to educational contexts and problems that are close to their own professional interest and concern.

What is Need-Press Theory?

This theory arises out of some masterly conceptual and empirical studies accomplished by Lewin (1936), Murray (1938), Stern *et al.* (1956), and Pace and Stern (1958). Much of this work is summarised in Stern (1970). For an educationally-oriented review of the theory see also Genn (1970b).

In this need-press theory, persons are conceptualised and measured in terms of their psychological needs. An instrument developed to measure these needs is called the Activities Index (AI). It measures 30 needs, from abasement, achievement, adaptability and affiliation, through aggression, emotionality, exhibitionism, nurturance, orderliness, practicality and projectivity, to reflectiveness, succorance and understanding. A person's need for achievement, for example, is measured by expression of the person's 'like' or 'dislike' for such as the following: setting difficult goals for one's self; competing with others for a prize or goal; taking exams; choosing difficult tasks in preference to easy ones; sacrificing everything else in order to achieve something outstanding. Needs are viewed as the determinants of behaviour from within the individual, and give unity and direction to personality. To know about a person's needs is to possess crucial knowledge about the person.

In the need-press theory, environments are conceptualised and measured in terms of their press. Press constitute the significant determinants of behaviour from without, or external to, the person. The crucial knowledge about a school is knowledge about its press, which is knowledge about the things that are rewarded, encouraged, emphasised and valued in the school, and that are visibly expressed and felt (Pace, 1963). Pace and Stern developed instruments to measure environmental press in academic institutions. The first environment index, in 1958, was the College Characteristics Index (CCI), followed by the High School Characteristics Index (HSCI). The remarkable feature of such an instrument as the CCI or the HSCI, is that it measures the environmental press along the same 30 dimensions as were used in the Activities Index (AI) to measure personality needs. Thus, just as person's needs for achievement or affiliation or orderliness or reflectiveness are measured in the Activities Index, the corresponding press of the school towards achievement or

affiliation or orderliness or reflectiveness is measured in the HSCI or the CCI. Press is measured by asking inhabitants of an environment of, say the high school, to report on their perceptions of the school, by indicating whether they believe certain statements about the school are, in their opinion, true (T) or false (F). Press for achievement, for example, might be measured by such items as: there is a lot of competition here for grades (true, as the keyed answer); students generally manage to pass even if they don't work hard during the year (F); most teachers here give a lot of homework (T); popularity, pull and bluff get students through many courses here (F); there are special awards for those who do the best work (T); most students here expect to go on to university (T).

Clearly, each student in the school, say, has a unique and private view of the school, as expressed in the reports of his or her own perceptions of it, and the real school, for the individual, is the school as he or she perceives it. However, the research evidence is that, to a large extent, the perception of press is consensual. This consensual press is taken as a measure of what the environment is 'really like', on the basis that '50 million Frenchmen can't be wrong'. In a sense, the school's 'personality', which is equivalent to its atmosphere or climate, or ethos, or culture, is described in the consensual press data pertaining to it. The other interesting research finding is that needs and press are usually independent, i.e. press is not merely a projection of needs and the environmental press index is not just a disguised personality inventory (Stern, 1970).

Perhaps the most striking aspect of need-press theory, implicit in the parallel scales used to measure needs and press, is the possibility of considering the notion of congruence (or dissonance), which concerns the extent to which there is a fit or a match between the characteristics of a person, P, and the person's environment, E. Pace and Stern believed that this information about congruence (or dissonance) might be a powerful predictor of what they termed achievement, growth and change (Pace and Stern, 1958). This was a monumental hypothesis, and although some attention has been given to its testing, it is still largely untested. Its testing implies use of Lewin's classic and now ubiquitous formula, $B = f(P,E)$, (behaviour, B, is a function of the person, P, and the environment, E). Still largely unknown is just what 'f' is, but it appears that notions of congruence between P and E will enter into that question. Part of the problem is to discover whether optimal environments satisfy or stimulate. Stern (1962) expressed this more graphically in referring to best yields of milk coming from contented cows, and pearls coming from aggravated oysters.

Much psychometric development pertaining to measurement of needs and press has occurred since the publication of the original scales. In particular, both needs and press have been measured by factors which are much smaller in number than the original 30 scales for each. The best known press factor scales, derived from the original 30, are five developed by Pace (1969) in an instrument called the CUES (College and University Environment Scales). These dimensions have proved very useful, not just in measurement of environments in tertiary education, but, through appropriate adaptations, also in secondary and primary schools. The dimensions are called scholarship, practicality, community, awareness and propriety, respectively. Scholarship, of course, refers to the extent to which an institution fosters scholarly and intellectual endeavours. Press for practicality implies emphasis on the pragmatic and on business-like efficiency. Community press fosters friendliness, togetherness and sociability. Awareness press fosters students' involvement in a search for personal and political awareness and aesthetic expression. Propriety press refers to an environment's emphasis on politeness, manners, and obedience to rules and regulations.

Another important development has been to separately measure what might be called, respectively, the faculty and student press. Faculty press is that which is associated with the attributes and behaviours of teachers and administrators, while

student press refers to that which is associated with attributes and behaviours of students. Sometimes separate measurement is also made of teacher press as contrasted with press from the administration. Such separate measurement of these various aspects of press (administration, teacher, student) allows for better use of press data for diagnostic purposes.

Some Australian Research Studies Based on Need-Press Theory

The first Australian studies of a need-press kind occurred at the University of Queensland, but since that time such studies have been made in a number of Australian states, as well as continuing in Queensland to the present time. A full review of Australian need-press research work is in preparation (Genn, 1983).

Studies to be reviewed here concern the environmental press or climate of schools or colleges or universities, or the manifest departments or larger sub-environments of these institutions, but do not concern climate or press of individual classrooms. Need-press theory is, however, eminently applicable to study of the nature and influence of classroom climate. Some derivatives of need-press theory, notably the work of Moos (1979) and Walberg (1974, 1979), have been focused on study of climates of classrooms. A review of research into classroom climate in Australia, notably work of the Moos and Walberg kind, has been recently prepared by Fraser (1981). A recent review by Anderson (1982) has been concerned with United States research into climates at both the classroom and the institutional level, (the latter referring to whole institutions or their major departments or other sub-environments that are not classrooms), and has included work based on need-press theory as well as other work linked with need-press theory or independent of it.

Some of the studies to be reviewed here have employed the full need-press theory, to the extent that they entailed measurement of both student needs and environmental press and attempts to link need and press data to student outcomes. Other studies are more properly termed press studies, where the emphasis has been on measurement of environments or on determination of correlates of environments.

Studies to be reviewed here will be grouped as follows:

1. Four studies of educational transition
2. Two studies of secondary school environments
3. Two studies of primary school environments
4. Studies of higher education environments

1. Four Studies of Educational Transition

Educational transition involves the shifting of a person from one habitat to another. Change of educational environments, in particular, which transition implies, is helpfully studied in terms of a change of environmental press, and a student's adjustment to that change is conveniently studied in terms of his or her needs, and perceptions of the press of the former and of the new environments, and matters of need-press congruence.

School to University Transition

This has been studied by Genn (1970a, 1971, 1972). The basic finding, not surprisingly, was that the environmental press in the last year of secondary school and

the first-year of university are substantially different. Faculty (teacher) press, in particular, was found to involve more of 'hovering concern' at secondary school than at university, where 'hovering concern' was an amalgam of friendliness, helpfulness, encouragement, criticism, and encouragement of dependency.

Junior Secondary School to Senior Secondary School Transition

Fry (1983), in a longitudinal study, is currently researching transition phenomena associated with the Year 10-to-Year 11 change in Queensland. Of considerable theoretical interest will be Fry's attempts to relate the information he has, about students' needs and environmental press and need-press congruence, to achievement and satisfaction outcome measures in Year 11, when control is exercised on students' prior (Year 10) achievement and satisfaction. This work will comprise an elaborate and substantial test of the Pace and Stern 1958 hypothesis earlier noted in this paper.

Primary School to Secondary School Transition

The research here was by Whitta (1975, 1977), who measured the press of final-year primary school environments (Year 7) and of first-year secondary school environments (Year 8) in North Queensland, and also anticipations Year 7 primary students had of the press they believed they would experience in the Year 8 environments of the secondary schools to which they were destined. The key findings were that, on the Pace press dimensions of scholarship, practicality, community, awareness and propriety, the actual Year 7 primary school press was significantly different from, and indeed greater than, the actual Year 8 secondary school press, on each of the five dimensions, and that the Year 8 anticipated press was similarly greater than the Year 8 actual press on each of these dimensions. These findings appear to contribute towards an understanding of students' transition experience, and may suggest changes that might be made to achieve a better articulation of primary and secondary education.

Pre-School to Primary School Transition

Throssell (1982) is currently pursuing a study of this transition and is occupied in a search for an environment index which would be suitable for administration to students at this stage of their educational life. Obviously a great problem is to find ways of presenting questions, once these have been devised, as the students' lack of reading and writing ability precludes use of a written questionnaire. Home variables will also be assessed, to contribute to a fuller and more realistic picture of the components and dynamics of this educational transition.

2. Two Studies of Secondary School Environments

A Study of Streams in the Secondary School

In what was the first need-press study to be completed in Australia, Whitta (1967) focused on the so-called 'academic' and 'industrial' streams in Year 10 in a large metropolitan Brisbane high school. He found that there were differences in the needs dispositions of 'academic' and 'industrial' students, and also that they reported differentially on the press of the environments they experienced within the high

school. However, Whitta noticed that there were what might be called streams within streams, and that sometimes contrasts within streams were as striking as some of the academic-industrial, between streams comparisons. Whitta also coped ably with the question of congruence, as it relates to achievement. He used information about student needs for achievement and perceptions of school press for achievement, to make up four groups, viz. high on need and high on press, high on need and low on press, low on need and high on press, and low on need and low on press, respectively, and found the combination of high on need and low on press was most conducive to scholastic achievement.

A Study of Secondary School Libraries

The secondary school library is a relatively distinct sub-environment in the school. Grice, at the University of Queensland, is currently studying library climate or press, as perceived by students, and the way this press may be determined by certain factors and may itself determine some student outcomes. He has already found press differences between libraries on the basis of their material and physical aspects (1982), and is interested to see how characteristics of the teacher librarian, and the other teachers who use the library in their teaching programme, may relate to the library press.

3. Two Studies of Primary School Environments

Measuring Primary School Environments and Finding Their Possible Determinants

A major contribution to the study of Australian primary school environments was made by Tainton (1979a, b), in his construction of an environment index based on environmental press dimensions empirically derived in the Australian (Queensland) context of primary education. This instrument, called the Primary School Environmental Scales (PSES), merits the attention of practitioners or theorists interested to measure students' perceptions of primary education. It measures primary school environments along dimensions called, respectively, alienation, resourcefulness, morale, humanism, awareness and concern for standards.

Also meriting the attention of theorists and practitioners are the correlates Tainton found of these press perceptions. He found, for example, that the organisational structure of the school was linked to the press perceived by students. The relationship was one where, in schools characterised by: (i) warm personal relationships between staff members; (ii) close contact between school and community; and (iii) flexibility in use of rules and procedures, the tendency was for students to perceive an environment where: (i) good use was made of resources; (ii) student morale was high; (iii) concern was expressed for the individual student; and (iv) there was a low degree of alienation. Likewise, Tainton linked teacher and principal behaviour, as measured by a variant of the Halpin and Croft (1963) Organizational Climate Description Questionnaire (OCDQ), to environmental press perceived by students. Esprit among teachers correlated positively with resourcefulness, morale and humanism, as perceived by students. The relation between principal behaviour and environmental press as perceived by students was particularly interesting and noteworthy. Where the behaviour of a school principal was characterised by supportiveness, production emphasis and professional leadership, the school's students tended to report an environment characterised by efficiency in resource utilisation and a concern for the problems of the individual student. Tainton also linked variables in a contextual domain to the environmental press as perceived by students. Rather surprisingly, size of school was not related to press, and country schools were higher than city schools

on Alienation. Socio-economic level was negatively associated with Alienation. Not surprisingly, objective measures of the quality of teaching areas and grounds were positively associated with the Resourcefulness press.

Variations in Primary School Environment With Year Level

Armstrong (1983) is currently preparing a study of possible variations in environmental press as students in primary school proceed through the various year-levels. Tainton's Primary School Environmental Scales (PSES) (1979b) will be used to measure press in Years 3, 5 and 7.

4. Studies of Higher Education Environments

University Environments

The adjustment of first-year students to their new university environment may be viewed as an outcome of person-environment (need-press) interactions. Genn (1970a) found that, with congruence measured by the extent to which need and press were discrepant on some parallel factors of need and press, it was possible to make successful predictions of student satisfaction and academic success.

It is very useful for educators to know not only how students view their teaching-learning environment but also how they would want an ideal environment to be. One such study (Genn, 1975) asked for information about Diploma in Education students' perceptions of what might be termed the actual and ideal environments, respectively. There was a substantial discrepancy, it seemed, between the two, with the students indicating that they wished the faculty (teacher) press had been more towards humanism, scientism, and welfare, and less towards practicality, than it actually was.

A third study of university environments entailed asking university teachers to describe the faculty (teacher) press they endeavoured to establish in their undergraduate classes (Genn, 1981). There proved to be interesting differences among university teachers, depending on their department, status, sex, age and prior school-teaching experience. For example, when statistically conservative estimates were made on the community dimension of press, history, economics and English departments scored highest, and medicine, law and civil engineering lowest, while, on this same community dimension, women university teachers scored significantly higher than men.

Colleges of Advanced Education (CAE) Environments

A number of researches have provided information about press of CAE environments. Because CAEs and universities are two relatively distinct and deliberately different kinds of educational institution, it is not surprising that the research, to some extent, has been concerned with university-CAE differences. Belligoi (1971) and Streets (1972a, b), in Queensland studies, have reported on such differences. Streets, for example, compared teacher education environments in a CAE and a university, and noted a greater press in the CAE for community and propriety, and a lower press for scholarship and awareness. Belligoi's study was focused on the testing of a need-press model, including congruence aspects, in a CAE setting, where he found needs, press and congruence to be effective predictors of achievement.

Review and Conclusion

In terms immediately relevant to the interests of educators, this paper has been concerned with showing that need-press theory has been successfully employed, or is being employed, in Australia, to tackle such questions as:

1. What changes in educational habitats occur for students in transition from
   — school to university?
   — junior secondary school to senior secondary school?
   — primary school to secondary school?
   — Pre-school to primary school?
2. What is school life like in the various streams of a secondary school?
3. (a) How can one measure what a primary school is really like, for its students?
   (b) How do such matters as the context of the school, the organisational structure, and the organisational climate as represented by the behaviours of its teachers and principal, relate to the students' perceptions of what the school is like?
   (c) Does the school life of primary school students change with year level?
4. (a) In what ways does an actual educational environment, as perceived by students in a university department of teacher education, differ from the ideal environment they wish they had experienced?
   (b) What kind of educational environment will students experience at university, depending on the department in which they work, and the status, sex, age and prior school-teaching experience of their university teachers?
   (c) How do universities and CAEs (Colleges of Advanced Education) compare, in terms of their educational environments?
5. Can we learn more about student outcomes, such as their satisfaction and success, if we know about students' psychological dispositions (needs), their perceptions of the press of educational environments in which they work, and the extent to which there is a match, or congruence, between needs, on the one hand, and press, on the other.

There is no suggestion that final and definitive answers have been given, in the research reviewed in this paper, to any of these questions, although it is hoped that some progress towards answers has been achieved. What is particularly hoped, however, is that educators will have gained a positive impression of the potential utility of need-press theory to assist them in the understanding and solution of problems they themselves view to be important. While the research models and instrumentation described in this paper may be useful vehicles for new studies in the future, such studies will be best where educators themselves use need-press theory, creatively and imaginatively, to locate and tackle problems that only they, as practitioners, could discern.

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TEACHING AND LEARNING IN HIGHER EDUCATION — PROMISE AND PERFORMANCE

J. LUBLIN

Introduction

This paper examines teaching/learning environments in higher education in Australia — that is, in Australian universities and CAEs. It considers what institutions say they do, and the reasonable expectations one might have of the educational processes at this level in light of developments in the theory and practice of teaching over the past two or three decades. All of this could be called the promise of the teaching/learning environment. Performance is then considered, not in a quantified way which examines the performance of students through success, failure and wastage rates in higher education but rather in a way which reflects the extent to which the performance of the institution in providing an environment for teaching and learning matches up to the promises. In very simple terms this involves asking what we can expect of Australian universities and CAEs in this respect and then seeing whether these expectations have been met.

Purposes of Higher Education Institutions

We are in a better position to ask what we may expect of our institutions if we know what purposes they overtly serve. What are the purposes for which Australian higher education exists?

The first Australian university, founded in 1850 in Sydney, took as its motto "Mens eadem sidere mutato", this indicating that it followed the British and Scottish university model which rested on concepts of the moral, ethical and intellectual purposes of university education. This perhaps was epitomised by the Chancellor of Melbourne University in 1885: "Classics and mathematics are studied for what they can make you rather than what they can give you" (Blainey, 1957:200). In the twentieth century a post-World War II writer said:

> Three things are required of a university: professional training, education of the whole man, research. For university is simultaneously a professional school, a cultural centre and a research institute. (Jaspers, 1960:53)

In 1975 Auchmuty, writing in Australia, said "The pursuit of truth wherever it may lead . . . is what gives a university its justification for existence" (Auchmuty, 1975:202).

The pursuit of truth notwithstanding, it was certainly true that over the years the Australian universities had assumed a vocational function, so much so that one local commentator said in 1976 that "the preparation of the professional man has long been seen by the Australian public as the main function of the universities" Bessant, 1976), a view almost certainly not shared by most university staff. However, the facts show us, whether we like it or not, that over 80% of students who currently graduate with a first degree from Australia's nineteen universities leave with this degree and use it vocationally — in other words, undergraduate teaching might well be said to be a university's most productive activity. Does this mean that universities therefore place a strong emphasis on providing excellence in the undergraduate teaching/learning environment?

It may seem at first sight that no such paradoxes should bedevil the other arm of higher education in Australia, the colleges of advanced education (CAEs). Particularly

in Victoria, these grew out of the virile tradition of technical education in the nineteenth century, through Mechanics Institutes, Schools of Arts, and Schools of Mines after the discovery of gold, to the senior technical colleges of the first half of the 20th century. In 1965 the Martin Report was tabled and the CAE sector was created.

At that time the rationale for the creation of a second tertiary stream was to promote the development of technological education, and the overt differences between CAEs and universities were to be that the former awarded diplomas not degrees, had an applied and vocational emphasis, had "a direct and intimate relationship with industry", ratered for part-time students, and had a primary emphasis on teaching (CACAE, 1966). While there were expressions of faith in the new sector, for example:

> Colleges of advanced education should aim to provide a range of education of a standard of excellence and richness of content at least equal to that of any sector of tertiary education in this country, so that students and staff will be attracted to them on their merits for the special opportunities they offer . . . (*Ibid.*)

these sentiments were increasingly rather cynically summarized by the phrase 'equal but different'.

The Martin Committee in 1965 had in fact recommended the creation of a trinary tertiary system, of universities, technological colleges and teachers colleges. Menzies chose only to implement the recommendations concerning technological education (known hereafter as "advanced education", hence CAEs) which, with its original emphasis on vocational education and the 'needs of industry', left the teachers colleges in the position of being neither flesh nor fowl for much of the subsequent decade. The Second Report of the Commonwealth Advisory Committee on Advanced Education (CACAE) said in 1969 that, concerning the concept of advanced education, "we are dealing with an evolving concept not susceptible to close definition" — not surprisingly, seeing that in the same chapter it defined "industry" as "a convenient short term to cover financing and manufacturing industry, commerce, government and community services". It is difficult to envisage what would be excluded by this definition — perhaps it was an attempt by the Commission to protect itself from recrimination against subsequent developments by the CAEs, as by 1969 teacher education had been accepted as a proper area of college activity. Certainly by 1974 the State Colleges of Victoria, a conglomerate of single purpose teachers colleges, had been admitted to the CAE sector, thereby adding more colleges to the existing Victorian total of twenty one CAEs.

By the early 1980s in Australia the CAE sector contained an extraordinary number of colleges. These included aloof specialist institutions like the Victorian College of Pharmacy, new large institutes of technology like NSWIT, old large institutes of technology like RMIT (which was founded in 1887 as the Working Men's College, and was known as this up until 1934), institutions specialising in the health sciences like Cumberland and Lincoln, institutions specialising in the graphic and performing arts, agricultural colleges and former teachers colleges which have diversified, like Kuringai, or which remain as liberal studies/teacher training institutions like Rusden.

In one sense the two sectors have now drawn so close together as to be indistinguishable — they both award degrees (but CAEs do not award doctorates), they both conduct professional training (Medicine, Dentistry and Veterinary Science are now the only exclusively university based professions in Australia), terms and conditions of employment of staff are close enough to be identical, as are salary scales, and the more aspiring colleges would wish staff to be visibly engaged in (applied) research.

At first glance it would seem that the drift has been only in the one direction, that is, towards university practice. For example, the DOCIT* colleges sought for many years to place themselves in a university-like relationship with the Commonwealth and thus avoid the constraints imposed on them and on every other CAE by the various state higher education co-ordinating boards. Among these constraints was that of complex administrative course approval procedures — the DOCIT colleges wished to be able to approve their own courses. The CAE sector had indeed been exhorted to respond flexibly to the needs of industry/the market place/society in a way it was popularly supposed that universities were not interested in doing, but the very cumbersomeness of the course approval process in the advanced sector meant a lead time of some eight years between the course being conceived (say a four year degree) and the first graduates emerging. What appeared to be happening in the post-Martin decade, on the contrary, was that in some instances the universities responded more quickly than colleges by developing into what might reasonably have been seen to be college areas, for example, first degrees in Social Work, degree studies in physical education and human movement, professional post-graduate diplomas, multi-disciplinary centres, continuing education and short courses.

In 1970 the Chairman of the CACAE said:

> In my opinion some of the universities' managements have failed to recognize what was an implicit statement of policy by Menzies. It should surely have been unnecessary for him to say bluntly that the universities were expected to swing away from the fields in which the colleges were required to operate, and that gradually the distinction between the two would become more marked. (Wark, 1973).

This, then, is an account of the ways in which the distinctions between the two sectors became less marked.

Nevertheless CAE staff had always been exhorted to regard teaching as their prime responsibility: for example,

> Thorough and conscientious teaching is a full-time job. If teaching staff not only lecture but also prepare and conduct practical and laboratory classes, run tutorials, give out work assignments and correct work set, they have little time for research at least during term. (Maddox, 1970:21)

Or more succinctly, 'The teaching function of the colleges is of primary importance' (CACAE, 1966), although the necessary relationship between teaching and research which the universities have been allowed to argue had been either conveniently ignored or invoked by those colleges wishing to engage in the high prestige activity of research. "It might be thought that if university teachers are more effective as teachers if they do research, so college teachers will be more effective if they do applied research" (Maddox, 1970:21).

Does this mean that teaching/learning environments in CAEs are as good as they can be made?

The Promise

From the foregoing it seems reasonable to say that in both sectors we might have an expectation of excellence in the provision of teaching/learning environments, if only because the universities in a *de facto* sense play such an important role in training, and because the college sector was to concentrate on teaching without the obligations of research and publication.

*DOCIT: Directors of Central Institutes of Technology (e.g. NSW Institute of Technology, Royal Melbourne Institute of Technology, Darling Downs Institute of Technology)

For the present purposes teaching is defined as a series of intentional acts performed by a teacher and designed to facilitate learning in students. These intentional acts comprise not only classroom behaviour but all the activities we associate with the word 'teaching' in its broad sense: curriculum design, choice of content, formal contact hour strategies, choice of teaching material, content and thrust of practicals, assessment.

Statements are sometimes made at tertiary level which by inference deny the usefulness of any intervention into an existing scheme of teaching. An example of this is the 'penny-dropping' syndrome: the penny will drop eventually for some students, so no matter that they do not or cannot understand most of what the lecturer is saying now. A more extreme example is the straight-faced argument which says that it actually helps if a lecture is unintelligible, because it then forces students to find out for themselves and work autonomously. However, I believe it is important to emphasise that research into teaching and learning has shown that it is possible to improve teaching in order to improve or enhance learning.

It must be acknowledged, of course, that our tertiary system could be said to be working quite satisfactorily — students enter, graduate, take up professional practice or pursue further studies. However, this is a functioning situation, not necessarily an optimally functioning situation. Could it do better?

What are the criteria by which we might identify conscious effort devoted to achieving excellence in this area? In an institution which valued and promoted teaching it would be reasonable to look for most of the following:

(a) teaching would be a high status activity, that is, would attract rewards in terms of appointment, promotion and tenure. It would be overtly valued by policy makers within the institution, and staff would see teaching as important in its own right.

(b) there would be an academic development unit of sufficient size and standing to enable it to play a significant role in the study and improvement of education within the institution.

(c) the principles and practices of higher education developed over the past few decades would be reflected in teaching/learning processes.

There are some substantial problems involved in attempting to look at the performance of institutions in terms of these three promises. The first is the difficulty of collecting data which are germane to the propositions above — in particular, of collecting evidence about the real situation. A very good example of this is the vexed question of what really happens in committee deliberations on appointment, promotion and tenure. Many institutions pay a great deal of lip service to the need for teaching to be an important or prime consideration in these areas, but it is usually not clear whether this was so, and if it was, how so.

The second problem is equally difficult: it must be possible to make generalisations which are generally true about the propositions above, but the wider the generalisation the more likely it is that an important exception will be quickly demonstrated. Although some generalisations are supportable from existing evidence arising from a survey of the whole Australian field, like Professor Johnson's recent report concerning academic development units (Johnson, 1982), the following discussion is confined to the institutions within which I have worked over the past twelve years, except as objective evidence already exists about other institutions. These include a university, a DOCIT college, a health science college, a small institute of technology, and a college of advanced education (non-teacher training). Nevertheless it is proper for me to end each section by asking: "If it is like this in the institutions I know, is it like this in others?"

The Performance

Teaching as a High Status, Valued and Rewarded Activity; its Overt Valuation by Senior Policy Makers

In so far as teaching is part of an academic's job, the facts of life seem to be that this part has less status and attract less reward than the scholarly activities of research and publication. As I have already said, this is difficult to prove empirically, but inferential evidence includes widespread staff opinion that research and publication is rewarded at the expense of teaching in appointment, promotion and tenure decisions, that while money is available in smaller or larger quantities for research it is not available for education development, that institutional newsheets and PR concentrate on the achievements of research, that research attracts outside funding, that the ERDC has disappeared but the ARGC remains.

As to whether teaching is valued, it is the opinion of Professor Johnson that there is a current indifference to teaching and that this is an attitude engendered by an institution's senior academics.

> Probably the biggest single change which would improve the health of institutions and render units more effective in them would be a change in the attitudes of that large body of senior staff, deans, heads of schools, heads of departments who set the tone or establish the climate in their institutions. They will almost always assure one most sincerely that they regard teaching and the education of their students as important; but their subordinate staff, in a frank meeting, will laugh at this and are convinced that research, publication and external recognition are the real roads to promotion. Almost no institution in Australia has a systematic procedure for collecting full and reliable evidence on the teaching performance of its individual or collective academic staff; and when chided about this, the authorities reply: "It is very difficult". These institutions exist to do the very difficult; they exist to carry out research into the unknown, to master advanced technology and to prepare large numbers of students, most of them of moderate calibre, for exacting professions. Until they seriously set about the not impossible task of evaluating their teachers, rewarding the good, improving the weak and removing the utterly hopeless — if such there be — from a teaching role, their claims to value teaching highly must be treated as velleities, not expressions of real will. (Ibid: 47-48)

Academic Development Units as Valued and Supported Enterprise; Teaching Perceived as an Intrinsically Important Activity

There is no requirement of staff in universities and CAEs to hold any formal or informal teaching qualification whatsoever. The fact that in Education faculties many do is incidental to the present argument. Somehow, academic staff have been expected either to acquire teaching ability by osmosis as they progress in a university from postgraduate student to tutor to lecturer, or to acquire it by divine intervention as they move into the institution from professional practice in the field or from research activities.

One of the likely consequences of this situation is that, in lieu of any other teaching model, input, or institutional requirement to study the process, staff will tend to teach as they were themselves taught. It is fair to say that compared with primary and secondary teaching in this country, tertiary teaching is conservative and traditional, at least partly for the above reason.

The lack of attention traditionally paid to tertiary teaching has gradually become a cause of concern over the past few decades. High university failure and wastage rate, at least partly caused by poor teaching, was a major concern behind the Murray Report in 1957, and led to the AVCC *Report on Teaching Methods in Universities* in 1965. In the establishment of the CAEs after 1965 teaching was explicitly identified as being of primary importance.

During the 1960s and early 1970s the triennial reports of the Australian Commission on Advanced Education began to comment explicitly on the need for institutions to pay attention to their teaching, and they suggested the introduction within individual institutions of centres for educational research and development as the way by which academic staff might have access to advice about and help with teaching within their own institution.

More recently, the Williams Report in 1979 contained the now famous recommendation, R5.24:

> That the Australian Vice-Chancellors' Committee appoint an expert Working Party to formulate programs for staff in the theory and practice of teaching, curriculum development and examining, and then later consider whether satisfactory participation in such programs should become a normal condition of tenured appointment. (Williams, 1979)

This led to the AVCC's Occasional Paper No. 4, *Academic Staff Development*, published in 1981 which concerned itself almost exclusively with the teaching function of university academic staff.

All of these official documents have shown a progressively increasing interest in teaching, but it is remarkable that none has recommended earmarked funds in order to put some of their principles into practice. In other words, the central funding body has never put money aside to promote tertiary teaching; institutions have been left to initiate and fund units as they see fit, or not, from their own recurrent funds. If Commonwealth money can be put aside for general development, evaluation, and research, then one is entitled to conclude that this reflects the relative lack of value attached to teaching.

Nevertheless, after 1965 many institutions did respond to the changing climate concerning teaching by setting up an educational research and development unit. So the situation that now exists is that most universities and some CAEs have an academic development unit of some sort and size, whose function in general terms is to work with academic staff to study and improve teaching within the institution. While their successes have been identified and analysed by Professor Johnson in his recent report, he also identified the adverse conditions under which most of them work. As noted, he reported that lack of interest at the top of the institution is perhaps the single greatest impediment to units being accepted within their institutions. However, not every university has such a unit, nor does every CAE have one — the foremost example of advanced education in this State (NSWIT) does not have one. I am not aware of any of the CAEs which are substantially devoted to training teachers having such a unit. So it can be said that although many institutions do have academic development units these units have had to vie with everything in the institution for a share of the diminished funding. The closure of some units, the decrease in staffing of others, their general understaffing, and their absence from other institutions entitles one to infer a low institutional value of teaching.

The Application of Research and Development in Tertiary Teaching

What has been happening over the last twenty years in tertiary education? What ideas have surfaced which offer exciting alternatives to traditional approaches? What developments and breakthroughs have occurred which might enhance the ability of tertiary institutions to deliver their promises to students of top quality education?

I believe that there have been several significant developments in theory and practice:

(a) The development by Bloom and his associates of their taxonomy of behavioural objectives in the three domains is a profoundly useful tool for thinking about the outcomes of education at any level. However, few course handbooks give little evidence at all that people in charge of courses at tertiary level have thought about outcomes. Much course description is still given in terms of content only, for example,

Syllabus Summary *Physics 2*
Relativity (6 lectures), Quantum Physics (20), Electromagnetic Theory (18), Solid State Electronics (or, in the D course, Classical Mechanics) (9), Electromagnetic Properties of Matter (13), Thermodynamics (13) (Uni. of Sydney, 1982)

(b) Programmed Self Instruction or Keller Plan approaches have by now been widely researched and offer the chance of individually paced learning and rapid feedback on learning. However, they are expensive to develop, and there is little evidence that such development commands any sort of priority in the disposal of funds within institutions. The work of Dr. Ilma Brewer in Plant Anatomy at Sydney during the early 70s is an important exception to this generalization, brought about by extraordinary personal devotion to an idea, unlimited capacity for work, and the availability of supporting funding at the time.

(c) The concept of criterion-referenced measurement offers the opportunity for courses to be planned to develop and test specified levels of competence. In its rigorous form criterion referenced measurement does away with rankings and honours, which may be a powerful reason why it appears to have been largely ignored by tertiary teachers, even in new institutions where no conservative traditions exist.

(d) Understanding of group process has given a new dimension to the facilitation of student learning and to the understanding of attitude change. But it needs teachers who understand it and are willing to step out of the authority role by making teaching subservient to learning, and who are willing to change their own habits and approaches. I know that such teachers exist, but I believe they are not in the majority.

So in terms of the original expectations of excellence in teaching/learning environments as expressed in the three criteria examined above, it seems fair to say that performance has not matched promise.

In addition, I wish to discuss a few further realities of the environment which do not fit neatly into the three areas above, but which I believe are facts of life for tertiary students and staff.

The first reality is the continuing pre-eminence of lecturing, which has hardly conceded its pride of place in tertiary teaching in Australian institutions, both old and new, although there is a wealth of research evidence to show that lecturing is only as effective as other methods in transmitting knowledge, is not as effective as other methods in stimulating thought, and is quite ineffective in changing attitudes (Bligh, 1971). It is quite remarkable that the weight of conservative practice still allows us to see lectures being given to huge audiences of several hundred, and to see lecturers reading their notes (or even textbooks!) to rows of students as they in turn take notes, even though the evidence would indicate that this is an inefficient use of learning time — it is of course a very efficient use of teaching time.

Some of the reasons why this continues to be the case may be emotional: lecturing is for example the most authoritative form of teaching possible, both symbolically and actually. It is also very powerful, and public. It may be asking a great deal of academic staff to ask them to surrender this power, this assertion of symbolic authoritative knowledge so it is reasonable to believe the university wishes them to profess it.

The second reality I wish to note is that of high student workload. The incongruence of what staff still perceive as the ideal of university education with the reality of the experience for students, was forcefully pointed out to me recently. A staff member complained that although students should 'read' for his course, based on his lectures, in fact it seemed to him that students did not read at all, or did so minimally. A student from his class provided the information that her cohort had twenty-seven formal contact hours per week during the term. When is a student ever going to have time to 'read' for a subject, other than to pass an exam, with contact hours like that?

Furthermore, there are several points that should be made about this. Most academic staff would expect students to put in at least one hour of their own per class contact hour. Even granting that some of those twenty-seven hours are pracs or labs, then on a one-to-one basis students are already up to around fifty hours per week. The reality of student life is also that assignments, reports, essays, projects, class quizzes are a continuous high priority demand on their time, and that some subjects are much more difficult than others. So it is quite possible that a conscientious student may be spending well over sixty hours a week on academic work. Perhaps this ought to be expected by students these days? If so, then they will not have the sort of thinking/discussing/reading/mulling-over time that is thought to be essential for effective tertiary education; and research appears to indicate that heavy student workloads induce a 'surface' approach to learning rather than a 'deep' approach (Gibb, 1982; Ramsden, 1980). In other words, working to pass exams takes precedence over working to learn, to understand and to become an autonomous learner. I am aware of some insoluble tensions here between the needs of professional faculties for time to develop knowledge and skills in students on the one hand, and on the other the ideal of tertiary education as the process whereby students take over responsibility for themselves, for example: "The aim of the undergraduate course . . . should be not only or even primarily to equip the student with knowledge, but also, and more importantly, to teach him to think for himself and work on his own." (Hale Report, 1964)

Clearly one cannot fit everything into the syllabus, and even if it were possible, much of it would become obsolete during the working life of the graduate. It is interesting to note the recent comments of a medical educator on this subject:

> As it becomes increasingly apparent that students can no longer be taught all they will need to learn, the focus of education must shift to teaching students HOW to learn and how to be independent, self-directed and equipped to deal with an ever-changing environment. It has been said that if a student can be trained to be an effective and independent learner he need not be filled with all the information she can contain before going into a new job. He will have the capacity to learn whatever she needs to learn. Indeed, he will have to generate that capacity in any case, whether she is trained to do so or not, since no classroom can prepare him for every contingency, for every aspect of life and work encountered outside the classroom. (Perlmutter, 1975)

The third reality is closely related to the previous one: we have adopted continuous assessment without discarding terminal assessment. In brief, students are now subjected to formal assessment procedures far more often than we were. This means both that the amount of formal examining has increased (and I include here classroom quizzes and tests conducted during term or semester which count for final marks) and that students' learning patterns are being regulated for them — it is hardly possible these days to ignore class requirements for part of the year while following other interests, but to expect to pass on a final exam. Perhaps it is not desirable either, but there was a dimension of choice there which no longer exists.

The other problem about continuous assessment is that it is often done in the name of feedback to students on the progress of their learning, but I suspect that the formative/summative issue is often confounded here, and that we use continuous

assessment that counts for final marks as a stick to ensure that students work continuously, rather than using assessment that does not count towards a final mark as a carrot for students to review and redirect their learning. I am not arguing for the abandonment of continuous assessment, but I do believe strongly that there are too many unthinking demands made on students and that they are in danger of being subjected to unnecessary assessments. The form of assessment profoundly determines the sort of learning that a student engages in as well as directing his time and energies — the area deserves to be thought about carefully.

The final reality I wish to comment on is that of the traditional separateness which continues to be maintained between disciplines. You are no doubt familiar with the ongoing debate over so-called service subjects — is maths to be taught to all comers as the pure discipline it is, or should, for example, architecture students get a specially designed course in architectural mathematics? How much psychology must be taught in order for a physiotherapist to be competent with patients? How can you maintain motivation in first year engineering students when 75% of their coursework is taken outside the Engineering Faculty? These are relevant questions, whose answers must be chosen from a fine line drawn between the needs of the discipline for autonomy, respect, and its need for profession on the one hand, and the needs of students for appropriate and relevant course work in professional education on the other.

The other result of maintaining separateness between disciplines is seen in the complaint by staff that students compartmentalise their learning and thus find it hard to integrate learning in a real life problem solving way. Quite so. But where are the course planning teams investigating this problem? In NSW I know of only two thorough-going attempts to teach professional courses in such an integrated way — Medicine at Newcastle, and Agricultural Science at Hawkesbury. These are radical approaches to learning and seem to need complete commitment at the top, active agreement and involvement by staff, and the resources to develop new approaches and new learning materials.

So my thesis is rather depressing — the promise or expectation of excellence in teaching at the tertiary level is not in general reflected in performance. Teaching seems all too often to be traditional and authoritarian, to be undervalued by teachers and their institutions. Teaching styles, workloads and assessment procedures seem all too often to be counter-productive in furthering the fundamental aims of tertiary education; that is, of stimulating students' learning, the acquisition of wisdom and curiosity, and the determination and resourcefulness to learn for themselves.

It is all redeemable of course — but it will need first a change of attitude, and a re-ordering of priorities at institutional level. These, like the best things in life, are free: it is the next stage which will be the expensive one.

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EDUCATIONAL EXPECTATIONS — TODAY AND TOMORROW: COMMON CURRICULUM AND INDIVIDUAL DIFFERENCES

A. HARRY PASSOW

In an interesting comparative study of the school and its future in Western societies titled *The School in Question*, Torsten Husén explored the problems which seemed to be besetting schools, tried to explain "the mismatch between school and society" and to suggest what might be done to come to grips with these problems. Universal elementary schooling began in the nineteenth century and was fully implemented in most industrial nations by the end of World War I. Secondary schooling became universal after World War II. In the late 1960s universal tertiary education was being considered within the framework of recurrent or life-long education. But, Husén points out,

> . . . at the very peak of its dazzling success, in the almost euphoric moment of being conceived as the prime instrument of individual self-realization, social progress, and economic prosperity, education began to be beset by doubts about what schools were achieving and serious criticisms were launched. The school as an institution came under severe attacks and in some quarters there was talk about a 'crisis', even a world-wide one.
>
> (Husén, 1979:9)

Husén cites seven 'crisis' symptoms. The most evident symptom is the loss of the earlier consensus "about the benefits of traditional schooling and the conviction that education always represented an intrinsic good . . . [and] the main instrument for bringing about a better society" (*Ibid.*: 11). Conservatives attacked the schools for low academic standards, lack of discipline, and neglect of the gifted, among other things. The liberals accused the schools of being joyless, oppressive, and prison-like. The Marxist educators condemned the schools as "instruments of capitalist society . . . there to produce a work-force that would fit the hierarchical and oppressive working life in that type of society." (*idem.*)

Another symptom has been the rash of commissions of inquiry of which the Karmel Report is but one example. In the United States in the early 1970s, there were at least ten committees, commissions and panels which set forth the shortcomings of the high schools, examined the nature and causes of the problems of educating and socializing youth, and proposed program and policy changes which would have affected all of the institutions and agencies serving youth as well as society generally. (Passow, 1976). Currently, a decade later, there are at least twenty-eight studies of the American high school underway, not to mention the National Commission on Excellence in Education appointed by the Federal Department of Education.

Other symptoms include the perceived failure of education to decrease the disparities among social groups and to realize the equalization of educational opportunities. Husén observed that "in our achievement-oriented society it has become increasingly evident that 'some are more equal than others' and that formal education does not guarantee equality of life chances even in socialist societies strongly committed to equalization" (Husén, 1979:13). Still another symptom is an increasingly negative attitude towards school as the students move through the levels of compulsory schooling with low-performing students and those from disadvantaged backgrounds showing the most marked, increasingly negative attitudes. Another symptom is the slipping down the political priority scale of education. Husén cites attacks from both the right and the left which have removed education as a high priority item in many political systems, especially those which began major reforms in the 1960s.

Among the most tangible symptoms is the financial retrenchment with operating costs for schools reaching a critical level. While the economy grew by 5% a year, a 15% a year increase in the cost of education was accepted but "with reduced growth or even zero growth, a labour-intensive industry such as education by necessity becomes subject to tough priorities that have to be established not only among education and other domains in the public sector but among levels of education as well" (*Ibid.*: 16). Finally, there is the institutionalization of education with education having become almost entirely identified with formal schooling. This institutionalization has had significant consequences in terms of motivation and discipline in the schools.

Husén concludes his study with a discussion by sketching "changes in the educational arrangements and educational practices called for in order to bring about both a closer connection between school and society and increased opportunities for individual self-realization." (*Ibid.*: 149). The major need, in his view, is to de-institutionalize the school so as to increase communications and integration with society at large and to relate schooling to learning which takes place in other settings. As he puts it:

> The rationale for supporting an institution such as the school is that it provides in a planned way vicarious instead of direct experience. Systematic learning that is prerequisite to the acquisition of competencies needed for self-realization and self-support in modern technological society cannot occur entirely in the informal setting of the family, the peer group, and the adult working groups. The process of upbringing and socialization, particularly in urban society, has become fragmented and inconsistent. The family, the pre-school institution, the peer groups in the playground, the school, voluntary associations such as the Church and the hobby club, and, not least, the mass media, do not together constitute a systematic and/or integrated learning system. . . .
>
> To the repertoire of basic literacy and numeracy skills should be added the mastery of abstract concepts needed in coping with science, administration, art and literature. The development of these concepts requires systematic guidance on the part of specialists in arranging learning opportunities, a professional person called a teacher. (Husen: 150)

Husén concludes with eight assertions about education by the end of the century. He sees formal, full-time schooling of the traditional type reduced both in terms of years of attendance and amount of classroom instruction. Pre-school instruction for children ages 4–6 years will be followed by formal classroom instruction until about age fifteen at which time every individual will have 'drawing rights' for another four to six years of education in institutions from which he/she can choose. Husén envisages a system of recurrent or lifelong education tied closely to career-patterns and career-changes with a wide range of individual options offered. Transition from school to working life will be facilitated by work experience and remedial programs leading to recurrent education options. All school leavers will be guaranteed a job, an apprenticeship, or a place in further or tertiary education. There will be important changes in the reward system within and without the educational system with less emphasis placed on marks, diplomas and certificates. Schools will become 'learning centers' serving all generations with a broad array of programs. The continued rise in the general education level will raise aspirations for participation in all aspects of decision-making. Finally, the consequences of the explosion of specialised knowledge will, in Husén's view, "generate a need for 'generalists': highly competent individuals with a broad inter-disciplinary perspective and with the ability to think across specialties in trying to solve social and technological problems" (*Ibid.*: 176). These generalists would become the meritocrats of the twenty-first century.

Husén raises a series of provocative questions which policy-makers and educational planners must address. Among these are the following:

— How do we differentiate the educational purposes of the school from those of the family, the media, the organisations, and the work place?

— What is the most appropriate institutional setting for the education of young people ages fifteen to twenty?

— At what age level should the inevitable selection for élite education take place? How can second-chances be provided in systems in which selection takes place at an early stage?

— How can a system of plurality of excellence — "a variety of career paths in formal schooling leading to different types of high-level competence other than academic ability" — be established?

— How do we arrange for self-evaluation and self-renewal of the educational system?

— What kinds of reshaping of governance and administration are needed to better achieve educational goals? (*Ibid.*: 179)

Each of these issues and a good many others which could be added warrants consideration. However, one that I will explore here is an issue raised earlier, the issue of common curriculum and differentiated programs and services. This is an issue which is related to or encompasses a number of other issues, including those of selection, individualization, and equal educational opportunity. A recent yearbook of the National Society for the Study of Education, titled *Individual Differences and the Curriculum*, puts the question this way:

> Do we know enough about differences between or among individuals to entertain, in a practical way, the possibility of providing most learners with a common curriculum adapted to account for individual differences but without compromising their chances for a rational, moral, and authentic life? (Fenstermacher, 1983:4)

The yearbook authors explore this question from the perspective of several disciplines — psychology, sociology, law and biology. These perspectives are interesting and highly provocative, raising questions about our goals and practices.

Cronbach has identified four basic responses to individual differences in schools, including: (1) *adaptation to a predetermined program* i.e. a fixed curriculum with students 'weeded out' at particular stages or forced to stay at a given level until they demonstrate mastery; (2) *adaptation by matching educational goals to the individual* i.e. goals are modified so that students are assigned to different kinds of programs or are allowed to select courses and activities; (3) *adaptation by remediation* i.e. same program for all students, with the basic program added to rather than modified and students requiring added time being given remedial work; and (4) *adaptation by altering instructional methods* i.e. teaching different pupils with different methods. (Good and Stipek 1983:14)

The last category involves matching particular instructional methods to students' learning styles and has been called "aptitude by treatment interaction" (ATI). Unfortunately, the research on aptitude by treatment interaction provides no clear implications for classroom instruction because of the complexities of individuals and of the classroom: "apparently, techniques that work in one setting with one group of students do not necessarily work in another setting with another group of students, even for the same teacher" (*Ibid.*: 16). Students vary on a variety of dimensions which affect and influence how and under what conditions they learn. Student performance depends on the interaction of a variety of factors including the student's characteristics and those of the learning environment.

Many approaches to differentiation are based on presumed differences in rates of learning. Gifted children were first called 'rapid learners' and acceleration was the approach used to provide for them. The widely used mastery learning model, as Block has pointed out,

> is predicated upon the assumption that up to 95 percent of our students can learn much of what they are taught to the same high levels typically reached by only our best students. The trick, Bloom argues, is being able to define what we mean by mastery of a subject and then being able to provide each student with the time and the quality of instruction he needs to demonstrate this mastery. (Block, 1974:17)

After reviewing the psychological literature on individual differences in the classroom, Cook and Stipek found "no single form of instructional treatment powerful enough to accommodate all the ways individuals may differ", nor do they find any one kind of individual difference that positively requires a specific instructional treatment (Fenstermacher 1983:4).

Popkewitz illustrates the complexity of responding to individual differences by looking at what he calls the school's missionary role to correct social and economic inequalities. He observes:

> There is a general social commitment that schools should provide equal opportunities for access to privileged positions in society. Schools are conceived of as objective institutions that organize, select, and evaluate children according to individual ability. The belief in equal opportunity, however, is confronted by a social situation in which there are different strata. Each has different cultural and social resources, not all of which are deemed appropriate for success in school. Special entitlements and compensatory programs, for example, are developed to provide the poor with the attitudes, sensitivities, and behaviors typically found in children of other social, cultural, and economic groups. Commitment to equal treatment of individuals and commitment to redress social and economic inequities produce a tension: treat everyone alike but differently. (Popkewitz, 1983:70)

Popkewitz reminds us that schools exist within a social context with the varied interests, values and inequities of society producing tensions and contradictions in classroom practices. He argues that:

> Individual variation is a psychological abstraction which isolates human traits, aptitudes and attitudes from the school setting, cultural environment, and social circumstances. . . . Considering individualization as a technical psychological problem may blind educators to the significance and dynamics of social structure. (*Ibid.*: 71).

Popkewitz raises the question as to whether social and political ideologies which shape the school's understanding of individual differences are in opposition to the philosophical ideals of a common curriculum.

Grouping, streaming and tracking have long been the means used to provide for individual differences in ability, achievement, aptitude or interest. While there are many variations of streaming and grouping, they are usually aimed at reducing the variability along particular dimensions in order to facilitate learning and teaching. Tracking, more usually used at the secondary level, involves assigning students to courses and programs often related to the students' career or post-secondary school aspirations. Although grouping and tracking have long histories and are still widely practised, they continue to be controversial. Fenstermacher argues that:

> The consequences of accommodating individual differences by curricular variations are enormous. Using individual differences in aptitude, ability, or interest as the basis for curricular variation denies students equal access to knowledge and understanding available to humankind. Students grouped as slow learners and later tracked into vocational programs are effectively barred from the literature, history, fine arts, and science — and the training in intellectual skills accompanying these disciplines — believed most likely to free their minds from convention, dogma, and cliché. Students grouped as fast, highly motivated learners and

later tracked into college preparatory programs usually are prevented from developing the practical skills and traits of character typically associated with good work at a trade or craft. No theory of education known to us permits such selective access to knowledge and ideas based upon individual differences in aptitude, ability, or interest. Of course, it is possible that some students may not benefit equally from unrestricted access to knowledge, but this fact does not entitle us to control access in ways that effectively prohibit all students from encountering what Dewey called "the funded capital of civilization". (Fenstermacher, 1983:3)

The essence of Fenstermacher's argument is that we need to be much clearer about "the knowledge and understanding, the skills and traits that mark a person as well-educated" and that we need to create curricula which provide a sound general education for all. The challenge raised is one educators have been grappling with since universal education became a reality: what constitutes the general education and the common curriculum for all and how must this be differentiated to take into account individual differences which make a difference? Does it mean exposing all students to the same content? In what ways do we differentiate instructionally and provide for diversification? Do we differentiate curriculum content, process, or both? At what point(s) do we differentiate? Is what Husen called "the inevitable selection for elite education" really inevitable and what are the curricular implications of such selection? Does equality of educational opportunity involve providing a common curriculum for all children, regardless of background?

There are really a number of curricula which individuals experience — a general education or common curriculum, a specialized education or career development curriculum, a covert or subliminal curriculum, and a non-school educative settings curriculum. These curricula are interactive and constitute the total learning experience although the emphasis will vary as the student moves up the educational ladder from pre-school to tertiary and beyond to continuing education.

The general education or common curriculum is aimed at developing the knowledge, skills, insights, understandings, attitudes and values required at some minimum level by all individuals if they are to function effectively in society as citizens, parents, workers, and participants in a good life. Goodlad has noted:

> The history of the emergence of four broad educational areas in goals for our schools — academic, social/civic, vocational and personal — provides an initial commitment (to a definition of general education for children and youth) . . . schools have no right to deny students access to some common learnings in these domains, to so emphasize one or two as to squeeze out the arts, or to train some students for jobs to the denial of vocational education for those who may not apply the learnings to a job but probably will use them as homemakers. (Goodlad, 1983:314)

At the most basic level, this curriculum is concerned with the skills of literacy, numeracy, citizenship, aesthetics, etc. At another level it involves, as Ward puts it, "those experiences serviceable in educating and training common higher mental processes . . . such as reasoning, judgement, abstraction, and understanding per se" (Ward 1961). There are individual differences which require differentiated instruction in the acquisition of these learnings — remediation, enrichment, acceleration, breadth, depth, nature, and kind. But, all students should have access to common learnings in those domains which constitute the broad educational areas.

There is a specialized or career development curriculum which is aimed at nurturing the special talent areas of the individual by providing learning engagements and opportunities which enable the acquisition of those skills, knowledge, insights, understandings, attitudes, and values needed to realise one's unique potential. This curriculum focuses on the identification and nurturing of individual talents and, in a sense, is the most highly individualized. In any area of specialised talent, there is the knowledge content and substance of a discipline; its special methodologies and processes; its modes of problem-finding and problem definition; and the exercise of

creativity, innovation and originality. The specialised curriculum aims at starting the development of talented performance by providing the basis for nurturing such talents through continued and advanced training.

The covert or subliminal curriculum is that which emerges from the learning environment and includes both cognitive and affective learnings. Self-concepts, task commitment and perseverance, attitudes toward others, cultural values, willingness to participate in the school's system of rewards and punishments — these are some of the things which students learn from each other and from the environment in which they find themselves. The climate for learning affects the concept of excellence and its pursuit. It is the school climate which affects the perceptions regarding cultural differences and which influence interpersonal relationships of all kinds. The climate of the classroom and the school, the interpersonal relations therein, the structured and unstructured learning environments, the formal and informal transactions which take place — these are all very powerful mediators of both cognitive and affective growth. The covert or subliminal experiences have a strong impact on the more formal curricular experiences. Just as one plans for reading or science or foreign language experiences, one must attend to the environment and climate for learning, not only for the classroom but for the school as a whole.

And finally, there are curricula created in non-school educative agencies. Many institutions and agencies instruct directly, deliberately and systematically. Education and socialisation take place in many different settings with cognitive and affective growth affected by the formal and informal, structured and unstructured curricula which exist in these settings. As Cremin has pointed out, traditionally only the school is thought of as having a curriculum:

> but the fact is that many institutions have curricula that are quite explicit and well-defined. Every family has a curriculum. . . . Every church and synagogue has a curriculum. . . . Every employer has a curriculum. . . . One can go on to point out that libraries have curricula, museums have curricula, Boy Scout troops have curricula, and day care centers have curricula, and, most important, perhaps, radio and television have curricula — and by these curricula I refer not only to programs labeled educational but also to news broadcasts (which presumably inform), to commercials (which teach people to want), and to popular dramas (which reinforce certain common myths and values). (Cremin, 1979:19)

The curricula of non-school agencies and institutions, beginning with the family, constitute significant learnings for individuals. Cremin has argued very persuasively that:

> it is important for the school to engage the instruction of other educators and seek to strengthen or complement or criticize or contravene that instruction, or more generally to try to develop an awareness that instruction and an ability to deal critically and independently with it. (*Ibid.*: 24)

Community-centered, experienced-based curricula represent just one component of what Cremin has called the "new ecology of education". Experience-based learning opportunities involve "learning by doing in a reality setting," extending the school's learning environment into the community in order to enrich the resource base, both human and material. Formal and informal arrangements, structured and unstructured, can be found in museums, libraries, laboratories, service agencies, government, industrial and commercial organizations, community centers, and so forth.

Husén raised the issue of how we differentiate the educational purposes of the school from those of the family, the media, the organizations, and the work place. Differentiating the educational purposes of the non-school agencies and institutions is a first step toward understanding the relationships between the school and these educative groups in order to strengthen those relationships.

In recent years, our schools have been concerned with providing good and appropriate education to a variety of particular populations — the disadvantaged, the gifted and the talented, the non-English speaking, the culturally different, the physically and mentally handicapped, to name a few. Special programs of many kinds have been developed. Almost every element of educational process has been modified or adapted — goals, content, instructional strategies, resource materials, personnel, evaluation procedures. While we have thought about and planned for these groups as if they consisted of homogeneous populations, we have come to realize that the range of differences within such groups is extremely broad. As I have written about the gifted, for example:

> The gifted and talented come in a tremendous variety of shapes, forms, and sizes. Some gifted youngsters are only slightly above average with respect to the criteria applied while others are so unusual as to be extremely rare; some individuals are gifted/talented in a single area, while others seem to be unusually able in practically any area. Some individuals who seem to have outstanding ability have relatively little motivation or interest in developing that potential while others are both highly talented and highly motivated. Some are high achievers and quick absorbers of information while others utilize knowledge in new and different ways. Some are basically consumers of knowledge while others are potentially outstanding producers as well as consumers. Some are specially precocious, manifesting unusual potential at early ages while others are "late bloomers" and do not show unusual potential or performance until much later. There are cultural differences with respect to which talent areas are more likely to be rewarded and, consequently, which will be nurtured. (Passow, 1981:9)

The common thread is that all of these children need curricular and instructional differentiation but hardly identical learning experiences. They require some common experiences with other children and youth who have not been labeled gifted or talented as well as those who have. The same can be said about every special population — each has characteristics and needs which are shared but also more which differ. Consequently, no single program or curriculum or instructional strategy will enable us to provide good and appropriate education for any group. We need to understand what elements of education are common and which must be differentiated and individualized.

In considering what the educational expectations ought to be for our schools, we need to consider many other elements — the teachers, the parents, the community, the setting, the resources, for example — we need to consider our planning processes, our ways of allocating resources, and our ways of relating educative agencies and institutions. Predicting the future is always chancy. Let me suggest that the human beings involved in the educational process in the next century are not going to be much different from those presently involved. If we can be more clear about what we want the children and youth who are in our schools today to become as a consequence of their twelve or sixteen or more years of association with us and if we can plan more effectively for fulfilling those expectations with today's population, with their tremendous similarities and equally tremendous differences, we will be taking a giant stride toward designing good and appropriate education for the future.

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THE PHYSICAL ENVIRONMENT FOR TEACHING AND LEARNING

C.J. MCGUIRK

The physical environment for teaching and learning appears, at first sight, to be a simple compact subject which might be dealt with in fairly precise objective terms. It could at first seem that the physical environment could be measured and discussed in terms of volumes, temperatures, lighting etc. It would then seem to be simple to determine 'good' measurements and use them to design 'good' environments. If only it were so simple.

The physical environment also includes characteristics which are much less measureable. For example, we know what floor area is appropriate for a classroom for 30 children. But what affect does shape have on the space? We know what level of lighting is appropriate to a certain task. But what affect does colour have?

In preparing this paper I adopted two parallel approaches. Firstly, I started talking to teachers again to see what they *now* consider to be the qualities of a good teaching and learning environment. I knew the views of teachers currently our clients but I started to talk to teachers in other schools and fields of activity. Secondly, I reviewed my own design methodology which had probably evolved over the 20 years that I have been involved in the field of educational facilities.

Teacher Views

Talking to teachers about their requirements for various types of teaching spaces became quite a hazardous pastime. Raising the subject in the presence of two or more teachers immediately caused an argument. It became obvious, of course, that on most occasions they were at cross purposes. For instance, mixing aesthetic requirements with practical requirements or mixing the age groups of students or mixing the types of subject being taught. In many cases it became a matter of agreeing on priorities or on a hierarchy of values in listing their requirements.

When I asked if the new schools being built now by the N.S.W. State Government were better than the old State schools built, say in 1920, I found many of the terms used for comparison were subjective and the qualities they were trying to describe were the intangibles. But a friend of long standing, a primary school teacher, brought a particularly wide-ranging discussion down to emminently practical terms. She said in the 20 years since she had started teaching in the State school system, three major improvements had been made. The provision of heating, ceiling fans and toilet paper!

She explained that when she started at her first school it had a corrugated iron roof with no ceiling and a fireplace in each classroom. Staff and children were permitted to bring fuel for the fire but no fire was allowed after midday. Secondly, the steel roof radiated heat so badly that on many summer days they had to leave the room. Thirdly, it was her job as junior teacher to cut up paper for the toilets every Monday morning.

The heaters, fans and toilet paper comment was very enlightening. The development of school design during my professional life time was brought down to heaters, ceiling fans and toilet paper. But this is a beginning for discussion. It shows there are physical dimensions to some of the requirements of the desirable teaching and learning spaces. But before going into those, let us turn to the second approach by which I prepared this paper.

Design Methodology

The design process involves an extremely complex mixture of intuition, experience, aesthetics and practicalities, and many books and conferences have covered the different methodologies over the years. But because we are dealing with the physical environment let us look at the approach popularly tagged 'form follows function'. No matter how much the aesthetics of a design can be argued the functioning of a building can be very readily assessed by its users. For this reason and for this occasion it seems appropriate to ask: "what is the function which is to be accommodated in a teaching and learning establishment?"

Designing a factory starts with establishing what processes are to be accommodated, materials handling, storage etc. In a hospital it has to be determined what treatment methods are to be employed, how the patient will be handled, what staff are needed and how they do their job, what backup services are required. When the function is clearly delineated, the design of the buildings' form can begin. In other words, how can the form of the building best accommodate the function? That is, form follows function.

For an education building the brief will first answer practical questions such as: How many students? How many staff? What type of students? What subjects will be covered? What special equipment is required? What timetabling or class structures will be employed? What students amenities are required? What teaching methods are to be used, lecturing, demonstrating or fabricating? When all this is decided the function layout starts to evolve and the plan of the building/s starts to take shape in the designer's mind.

Now bring together the two approaches I began with: firstly, there are measurable physical dimensions which are appropriate, and secondly there are planning methods to answer functional or operating procedures.

Measurable Physical Dimensions

In these fields accumulated results of experimentation and experience in many specialities has led to an information bank becoming available to designers. For instance:

(a) We know the appropriate plan size of a classroom for 30 kindergarten children, for 30 high school students or university students or the size of a technics room for 15 high school students doing woodwork.

(b) The Standard Association has standards for lighting levels appropriate to different tasks, a standard for rate of any changes in mechanically ventilated spaces and many other matters.

(c) We have recommended temperature and relative humidity levels for air conditioned buildings.

(d) We have ergonomic criteria for size and shape of tables, chairs and work stations for various tasks.

In the N.S.W. educational field much of this exclusively 'physical' information necessary to design a school or tertiary establishment has been compiled by the N.S.W. Government Architect's Branch for use by its staff and its consultants. It is their information bank.

But planning of an educational building is more variable because added to the internal function of the building are the characteristics of the site, the slope, the local

climate, the orientation to sun, wind and view, and outside influences such as traffic noise. For example, a school building suitable for Sydney's seaside suburbs with open verandahs and large window areas for natural ventilation, would be quite inappropriate for Cooma at one extreme of winter conditions or to Mt Isa's summer conditions. Climate can and should completely change the designer's approach to what might otherwise be similar functional operations.

So far this has been the easy part of the physical environment. Now we have the core.

Functional Procedures

I said the function of an educational establishment can be seen in its numbers of students and teachers, subjects, equipment amenities and teaching methods. But more more deeply, consider this: if a physical environment is to be established to serve the function of teaching and learning then what is teaching, what is learning and in what way are those processes served or hindered by the environment provided?

Without going too deeply into the psychology of the learning process it may suffice to say that to get information from the teacher to the student requires the use of the senses and the use of the brain. We therefore have to provide an environment which serves the operations of seeing, hearing, smelling, tasting and touching as well as memory, reason and imagination. To illustrate, let us just examine a few aspects.

It is important for the student to see what the teacher is demonstrating. This requires the provision of an adequate level of light. But glare at the point of demonstration can cause local loss of vision and therefore loss of information; it can cause headache; and it can eventually deter the student's attention. Controlled sunlight is a desirable asset in the domestic situation which allows, say, sun intrusion into rooms during winter and exclusion during summer. But in the academic work situation, writing or doing fine manual tasks, direct sunlight will be an extreme glare source causing eyestrain and headache. However, it may be acceptable in the kindergarten room where tasks are of very short term and fairly large scale.

The temperature of a room has two effects. It affects comfort to the point where the body cannot function suitably. That is, if too hot, sweaty hands and arms spoil work on paper and in fine craftwork; and if too cold, shivering causes loss of finesse in the same tasks. The second effect of temperature is that which is not in the extremes but which will affect comfort to the point where the student gets drowsy and therefore loses concentration. Ventilation is closely allied to temperature and a variation in one can be balanced by a variation in the other and provide a not-too-cosy but appropriate level of comfort.

Hearing has had a lot of attention in recent years in the industrial context where excessive noise leads to deafness. In the educational context sound can be a much more subtle problem. A classroom should be acoustically isolated sufficiently to allow students and teacher to hear each other but not be distracted unduly by outside noises such as conversation, music or noise. It is important to the students' memorising and reasoning processes to not have to filter extraneous sound information. Strong distractions can, of course, cause complete loss of attention. These days with the provision of many noisy activities, such as technics and music, the location of the noisy rooms has to be considered early in the planning process as well as in the later design stage of selecting materials and construction methods.

Extreme comfort and extreme distraction are to be avoided in the environment for normal intellectual activity. It may be a similar situation to that first demonstrated by

Yerkes and Dodson (1908) in which it is simply shown that when very drowsy we psychologically perform ineffectively or inefficiently, and when overstimulated or 'over-excited' we perform poorly. But somewhere between those extremes our performance reaches optimum level.

In the above examples I have shown that a physical effect on the student can become a psychological affect and this is where the environment becomes more difficult to describe or to control.

What Makes Good School Design?

Much of what we consider to be good design work for educational buildings has been very much a result of trial and error by the educational and design fraternities. What has been found to work well in one place is used again in another. What was found lacking in one place was discarded or modified for future use. In fact, evaluation is a vital final stage of any design operation. It saves 'redesigning the wheel' for each new project.

However, there have been attempts to determine what makes good environments in a more controlled way than just by hindsight. Experimental psychology, sociology and social anthropology have been used in the evaluation of people's behaviour in their environments. A good summary of these approaches is given by Roderick J. Lawrence (1982). He also shows that these 'clinical' approaches are far from exact at this stage and require a great amount of further work before they contribute significantly to architectural design methodology.

But from previous experience we do have some practical guidelines to what are desirable teaching and learning environments. Some of it may be psychological, sociological or anthropological but it has not been obtained clinically as has been attempted in study methods mentioned above.

For instance, it is accepted that for young children the school should be viewed as an extension of the home and the spaces in the school should be domestic in scale. Infant school design has, for this reason, incorporated broken-up classrooms with different levels, withdrawal nooks and soft floor coverings, all of which tend to reduce the scale of the space which was necessarily large, housing, as it does, 30 children. Reduction of ceiling height can be accomplished to a limited extent. But it is also very interesting that adults don't necessarily like to remain in very large spaces for long periods. Adults will stand in awe or admiration at a large church or auditorium but prefer to work in smaller spaces. Even in fine weather most people camping outdoors prefer to sleep in a shelter. In an experiment in the problems of human isolation I once read about, a man left in a huge underground cavern for a long time said he felt compelled to withdraw into a tent provided so he could rest with some feeling of security.

It was observed by Kamino (1968) that people waiting in railway stations gathered around the edges of large spaces or adjacent to pillars but not in the open spaces. Carter demonstrated how people sat predominantly in the perimeter seats of a restaurant leaving the middle places to be filled last. (Carter, 1974)

These observations lead one to wonder why learning spaces for senior high school and adult students are so plain and so uninteresting in most places while so much care is given to the design of spaces for young children. This willingness to scale down spaces, I think, has led to use of irregular shaped rooms and outdoor spaces in many educational projects for senior students in more recent years.

Irregularity of space is often used just to provide visual stimulation or interest. An architect would naturally hope that the interest of his design would be enjoyed by its

occupants and would therefore contribute to their performance in the building. Irregularity in outdoor or circulation spaces provides group gathering spaces. This is obviously used quite intentionally in newer schools and colleges by their architects. It is, however, contrary to many teachers' views that spaces in schools should be plain and open, free of nooks and crannies, and all with a view to easy supervision. It seems that either teachers are now not so concerned about the problems of supervision or they accept that the disadvantages of irregular shapes are more than balanced by the advantages.

Outdoor or circulation spaces require as great attention to design as the teaching spaces because they are the introductory spaces which condition the student for the start of a session or help his recovery after a session of learning or study. In fact it is often the out-of-class areas of a complex which make it a nice place to be and which give it the character by which it is known. These outdoor or introductory spaces can make the difference between a student's persevering with a difficult course or dropping out.

Teachers and School Design

It may be seen from this short discussion that the designer of the physical environment has to cover many fields to give the finished product in which many of you work. But the teaching fraternity has a big share in design responsibility. Firstly, the design of an educational facility should be a multidisciplinary team effort. Architects should not design in a vacuum. Their designs should be constructive responses to well thought-out functional briefs devised by the client body. New design ideas proffered by the architects should be carefully reviewed by the client body before implementation.

After the ideal building is completed its successful operation depends on intelligent use and care by the staff. Staff members should go to some trouble to find out the physical characteristics of the building and local natural environment in order to relate the operation of the building in tune with the variables of the climate. It disappoints me when I go into a school and find all the lights switched on when the daylight is quite adequate or to find a class half asleep in a stuffy room with all its adequate windows shut on a winter's day when five minutes of open windows could refresh everyone and five minutes of heating restore the room to suitable temperature. Or perhaps a few top windows left open would provide some change of air with little loss of temperature.

Most of all, I have observed and most teachers would agree, the person-to-person relationship between teacher and student overrides all other considerations of a teaching and learning environment. A competent, caring teacher can carry on a class in a space lacking in almost all physical facilities. A staff of such teachers can give a school such an atmosphere that the buildings and equipment have to be quite terrible to diminish it.

Conclusion

To briefly summarise we could ask; "Where has the design of educational establishments gone in the last 20 years?" I would have to agree with my primary teacher friend that much greater attention has been given to the provision of bodily comforts of occupants by way of heaters, fans and toilet paper and other design devices than ever before. The built environment has developed from stand-alone, purely utilitarian structures in open supervisable grounds, to human-scale complexes integrating internal learning areas and external spaces and landscaping. Previously buildings were built to stand out in their own right. Some were even monumental in

character. Now great attention is placed in the design process on the needs of the user; the student.

In the near future we will have to attend to two new design problems. Firstly, the sheer weight of computer and electronic hardware will have to be accommodated in the educational establishments. Great effort will be needed to keep the environment human. Secondly, the great number of students staying in schools is forcing a new education system to evolve and it involves many new subjects which will need new facilities not previously required in the traditional school we know at present. This could mean that schools and TAFE Colleges will grow in size with more technologically equipped rooms. Because many of the students staying at school would prefer to be at work the design of schools will even more urgently need to be nice places in which to be.

In conclusion, I suggest a good physical environment can be provided for teaching and learning in quite simple buildings as long as the lighting and ventilation and temperature are controlled to suitable levels. Outdoor and circulation spaces are important parts of the environment and deserve much more attention than has been apparent until recently. The design need not include expensive materials and finishes to achieve a very good result.

The overall architectural design of a complex and of the internal learning areas should give character and interest to the environment and it can be a stimulus to the intellectual activity of teachers and students alike.

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ALL-ROUND EDUCATION: THE NEED FOR PERSONAL CONVICTIONS

M.F. CUSI

The following words of a student at an international university conference two years ago can be useful to frame the topic of this paper:

> One can pick a true teacher almost immediately, just by looking at him. A true educator has a great deal within himself; he knows how to transmit man's concern to seek the truth. But one cannot reflect the truth if he has not converted to it.

The theme of this paper is something we do not hear much about today: the need that teachers and educators have for inner convictions, specifically in the university milieu.

Factual information has been obtained from several student surveys carried out for the yearly UNIV Conferences sponsored by ICU over the past three years. I.C.U. — Institute for University Cooperation — is a private non-profit body founded in Italy in 1966 to foster cultural and scientific development in the service of man and society through cooperation in education. It has been officially recognised by the Italian Government, and it operates in the fields of culture and international cooperation. It also works with the Italian Foreign Ministry on technical cooperation projects for developing countries.

The yearly UNIV Conferences are the final stage of the research done by different working groups in 400 universities in over 35 countries of Europe, North and South America, Africa, Asia and Australia. Each working group carries out a survey among colleagues considered by their peers to be "potentially leading citizens". These surveys are of the "market research" type, where one aims at a specific sector of the population to maximise a certain defined effect. A personal interview approach is adopted, where each question has provision for a categorical YES/NO response and an open-ended reply.

The Meaning of Education

Over the years divergent views have been proposed on the subject of education. It is important, however, to agree on one point: the need to know what education is, and hence its function. Only then will teachers and educators be in a position to identify their professional — indeed vocational — role, and to serve society in the persons of their students and colleagues, to the best of our ability.

Skinner (1969:36–7) defined education as "the establishing of behaviour which will prove advantageous in the future both to the person educated and to others". To consider education simply as a pragmatic technique or as a pure transmission of factual knowledge is not only to belittle its concept, but also to downgrade the role of teachers and educators, indeed to reduce man to a sophisticated automation, or to some kind of living computer. The ability to store information and to put it into practice are not the only, and definitely not the most important, driving forces in man's life.

This notion of education has more to do with man's external behaviour; however, the original meaning of the Latin word *educere* is 'to draw out'; in other words, more akin to 'bringing up'. To bring someone up entails a twofold process:

(a) that of nourishing the person, to put things into him/her; and

(b) that of providing the person with room to grow: allowing mind and inner powers to expand and develop on what he/she has received.

I would suggest a deeper meaning of education, comprising not only external behaviour but also reaching deep inside, fostering the growth of habits and attitudes that make a man what he is. Both views, quite separate in their origin, blend together to give us the more complete picture of a human being developing by acting on what he has received. Education is thus a deliberate, intelligent and voluntary act, exclusively aimed at developing all the attributes proper to man (Garcia Hoz, 1979).

Then, to meet the needs of the human person two aspects ought to be considered:

(a) what man has in common with others, because it forms the basis of individual and social life; and

(b) what makes each man different from others, that which gives rise to his freedom and the rich and varied field of human endeavour.

When considering both aspects one factor appears to be crucial to the shaping of human character: the ability to judge by forming and applying our own criteria; in a word, what we may call a critical sense.

The original meaning of 'critical sense' is that of an active acceptance of what we are told, inquiring into the worth and validity of the assumptions upon which it rests, and on the facts supporting it. Unfortunately, this concept is often times endowed with a subjective and negative meaning. It has come to mean a negative attitude, the systematic rejection of what we hear, more so if it comes from someone in authority.

Along this line of thought, critical sense becomes downright criticism of everything and of everyone that there is, simply because it was already there. We should notice that in this understanding of critical sense what is in fact being rejected is objective reality itself, as the source and yardstick of truth. Truth is replaced by opinion, personal opinion, and as a consequence words are often emptied of their objective meaning and inflated with whatever content we want to put into them, making intelligent discussion impossible. And with it, education becomes impossible too.

Students Look at Themselves: An Overview of the Responses to Two Surveys

The influence of the external environment on students is obvious to all, at all levels. For instance, peer group pressure is often a decisive factor in shaping attitudes and behaviour, the cause of many tensions for both teachers and students. "The purpose of man and the future of the university" was the topic of the UNIV 80 Conference, the first of a series attempting to outline a number of external factors influencing the development of university students.

A most striking feature of the student survey done for the 1980 Conference, carried out by some 300 working groups in 400 universities, was the similarity to be found among the 44,000 students surveyed in 43 countries, despite the obvious differences in culture, economic level and geographical context. For instance, sport, status and material well-being are everywhere dominant motives, despite the expressed desire to serve others and society.

This desire, however, remains a desire: there is idealism without commitment. Even serious political reflection seems to be scarce. This is not to be confused with political

activity, including violence, where the lead is almost universally given by political currents foreign to the university, and which make use of both students and staff simply to detonate or amplify a situation.

Another finding was that universities function primarily as academic dispensing centres in which staff-student relations are minimal except at a superficial level. The exceptions to this observation merely highlight the overall uniformity. Unfortunately, in this case, Australia is no exception.

The following year, 1981, the topic of the UNIV Conference was "Knowledge and the meaning of man in the university", continuing the study started in 1980. The following extract is taken from the Australian Report:

> The establishment of personal relations is a big attraction of university life. However, these relationships do not often develop into true, personal friendships and tend to remain at the level of social acquaintances. The following reasons can help to explain these facts:
>
> — a lack of knowledge or understanding of what true friendship is: 'a relationship of affection, of mutual knowledge, that leads to self-opening and self-giving';
>
> — little sharing and/or exchange of ideas and ideals, perhaps because there is a definite shortage of ideals;
>
> — a general trend towards self-centredness, both in the material and intellectual spheres. (Cusi, 1981:102)

There seems to be a tendency among university students to find refuge in the personal and private spheres. This may be the result of the discrediting of the main politico-ideological currents, as well as the errors found in the actions of many institutions and associations.

Everywhere there has been a deterioration of values common to all men, irrespective of their political or religious framework. The following four factors are evidence of this deterioration:

(1) True solidarity is absent. Despite the rhetoric of community and social spirit, the reality is one of isolation and self-centredness.

(2) There is little resistance to the easy, ready-made, answers, ideas and behaviour patterns, proposed in cliches and slogans widely spread by the mass media.

(3) There is an ambivalent attitude to work and to the continued, patient and rigorous effort that it demands.

(4) There is also a tacit scorn of the highest functions of the intellect, of the effort to seek the truth as something objective, and not simply dependent on individual preferences. The only absolute accepted is that everything is relative. The first supposition basic to the development of the critical sense, namely that reality can be known by the human intellect, is seldom debated.

It is also interesting to notice students' views of the university, on its function and its relationship to themselves. The majority of students think that knowledge is worthwhile only if it perfects the human person as a whole. Scientific knowledge on its own is not considered to be sufficient. It is worth noting that this result puts us on the road to a key point: everything that contributes to individual improvement receives support and allegiance.

This fact was confirmed in the answers to the question: 'What is the meaning of university study for you?' Personal improvement was the most important, and study as a means of serving others was last.

The 'Me Generation'

The last question of the UNIV 81 questionnaire was:

> For me the existence of a university environment where proper scientific training and personal improvement is possible depends on: . . . five options were suggested: Society, educational policy, the functioning of my university, the lecturers, myself. (Cusi, 1981)

There was no doubt; the first place was taken by 'myself'. After this came society, in its most general sense. The teaching body, lecturers, came last.

Once again, the personal element, the ego, loomed large, which led to an idea proposed by the Canadian working group: the concept of the 'Me Generation'; the generation of the ego, and of mine. This ego is prepared to identify its interests mainly or exclusively with those who think the same way as it does. It agrees that knowledge has value inasmuch as it contributes to the improvement of the individual self. This ego, however, is not a closed ego; it rejects all forms of limitations, but it is open to exchange of ideas and concerns beyond its own. This ego, finally, finds little help from its environment, according to the opinion of the large majority of students interviewed.

As mentioned earlier universities function primarily as academic dispensing centres. This idea was confirmed in the UNIV 81 Conference in more ways than one. An overwhelming majority of students consider that their university does not aid the realisation of genuine human values.

In summary, there is empirical evidence that the environment of university students lacks basic elements necessary for their development. It is almost impossible to develop a critical capacity, to receive an all-round education in an environment where self-centredness prevails.

A 'Typical' Lecturer

An obvious factor of influence on students is the teaching staff. How do they — students — see and identify their 'average' lecturer? Answers to this may well provide some clues to the problems that affect university students.

According to the students surveyed, a typical lecturer is characterised by his/her lack of commitment to truth. Very often this lecturer holds a relativistic outlook, even when stating that he/she does not want to pass judgement. Truth therefore is treated merely as a subjective and historical matter (and at times 'historical' refers to a well defined kind of historicism: historical materialism or Marxism). TRUTH with capital letters is not even hinted at as a mere possibility.

This 'typical lecturer', despite his competence in a specific field, is generally isolated and does not become an intellectual leader. Basically everything is reduced to the age-old formula 'live and let live'. This apparent tolerance is often however a subtle — and at times not so subtle — form of intransigence towards those who, on the contrary, wish to commit themselves to the quest for truth.

Like Auguste Comte, the 'typical lecturer' could repeat that "everything is relative, here lies the only absolute principle". But, there again, we could answer Comte by saying that his one absolute principle is nothing but the absolute contradiction of his very theory. Intransigence and inconsistency are both characteristics: when teaching technical subjects or disciplines of the natural sciences, this relativistic ideology either does not exist or does not apply to the subject matter. The 'typical lecturer' is assertive and does not leave room for relative and ambiguous attitudes.

When, on the other hand, the subjects touch upon some aspect of life — from biology to psychology — and more specifically the whole range of human and social

sciences, the relativistic outlook becomes the framework of exposition. The mere allusion to possible transcendence is considered 'sine sense', nonsensical. For instance, the common approach is opposing faith to science, to finally relegate the religious dimension of man to the rank of a simple historical or social subjective phenomenon.

Quality of Life

The UNIV survey of 1982 added new light to the relations between students and their teachers. The subject studied was "Quality of study and quality of life". The ethical aspects of study as a professional activity, source of rights and responsibilities towards others, were examined, as well as the external factors affecting study, such as contact hours, study methods and techniques, time devoted to individual, personal study, and so forth.

As in previous years, the findings were very similar in most countries. As in 1980 Australian students were found to be serious in their study and tended to work hard: over 75% average 2 to 4 or more hours of daily personal study. Australian students also showed a considerably pragmatic approach: they are very ready to be the centre of attention and care, but little mention is made of serving society — giving back to others what one has received. There was apparent a convenient dichotomy between person and society.

Mention was made above of a deterioration of values common to all men irrespective of their political or religious framework. The vast majority of students think that it is important to search for values through their studies. Half of them are of the opinion that neither university nor society help them in their search. But when asked 'what are values?', their answer can hardly surprise: "That which is important to me, those are my values".

Given this apparent contradiction, it would be interesting to know whether students think that they should seek advice and, if so, in what areas, and to whom should they go in their quest for advice. *A priori* it would appear natural that their teachers have a key role to play in this regard, and that students would recognise it.

To the questions about the need to seek advice and from whom, the majority of students thought that for problems that go beyond a purely scientific or technical matter it was a good idea to seek advice from authorities outside the subject area; yet few do. The following reasons may help to understand this contrast between thought and action.

(a) There is a lack of true commitment and a lack of real interest to know the truth (it might complicate one's life; it is therefore better to remain ignorant).

(b) There is inability to find the right person among those with authority to discuss these matters, which should be a matter of concern to those who are in daily contact with them.

(c) The past experience of the poor advice received when it is sought: confused, relativistic-type answers given by those expected to provide positive guidance. There is at this level, too, lack of commitment to truth. Is it possibly due to lack of courage?

It is no wonder, then, that students do not expect to receive example and leadership from their teachers, and that they do not seek it: no one in his right mind searches for confusion!

A worrying trend among students is that they manifest a general attitude of self-contentment. Might it be a symptom of the 'lucky country' image, or of the

general lack of effort derived from a self-centred, selfish approach to life on the part of those who 'have had it too easy'? Australian university students are, unfortunately, quite happy with themselves. With this attitude, the danger of mediocrity is not far away.

Teacher Leadership

We have, then, a student population isolated from its teachers except on the material, technical aspects of their courses, and with little respect for a leadership which is generally not provided. However, teachers are eager to increase personal, meaningful contact with students. This too, was one of the conclusions of Australian academics at preliminary sessions of the 1981 UNIV Conference. Students themselves rank this interest in students high among the qualities of an ideal lecturer. It was also felt that those staff who could have an influence on students by an honest and demanding presentation of their subjects are too busy publishing their research to get out among the students.

We have now turned the full circle. Students are not seeking leadership from lecturing staff — which is the best means available to make an impact on the surrounding environment — perhaps because they have grown used to the fact that their elders do not provide it. Many times lack of courage and/or conviction are the reason this much wanted leadership is not provided: it would certainly go against the general trend!

Yet, we have the elements to provide this leadership. When students were asked how many good lecturers there were in their courses, the answer 'none' never reached higher than 10%. The answer 'all of them' reached 19%. Naturally, in all countries, the majority answered 'some'. When asked for a more specific definition of 'some', the general opinion was two or three. These data are recognition of at least teaching aptitude, scholarship and interest in students.

We have a paradox on our hands: students are and feel isolated; they do not regard their teachers either as an example or an inspiration: yet, teachers are in a position to make a substantial contribution to their lives, beyond their own expectations, if together with the example of hard work and well earned professional prestige they would provide the inspiration of commitment to an objective set of values, no matter the cost.

Education — a Challenge

The acquisition of critical sense has a crucial bearing on the all round development of the student. This critical capacity requires an acceptance and knowledge of objective reality. Teachers and educators will provide leadership only when they are committed to searching for truth. Thus they will put into practice the fundamental idea of education, passing on the challenge of knowing external reality and objective truth, and ultimately, strange though as it may seem, the challenge of finding a personal God.

Even though indifference to truth and religion dominates the university culture, well over 50% of the students surveyed in no way rejected the subject of God. On the contrary, they are attracted by it and interested in it; probably at the beginning only as a subject, but this is a subject that immediately affects life as a whole.

The possibility is open to all teachers of having a positive influence. It is in this sense that I refer to the internal environment: convictions, ideals, set in the framework of

objective truth. Quite a challenge for both teachers and students, but we know that the young love a challenge. What better challenge can be offered to them than the challenge of education, of life itself?

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SECTION IV:
EXPECTATIONS FOR THE FUTURE

CHALLENGE OF THE EIGHTIES: BRINGING INFORMATION TECHNOLOGY TO PEOPLE

F. BARR-DAVID

Educational institutions, along with society in general, are grappling with the ways to encompass new technologies in a cost effective manner, as we now see the beginnings of exciting new communication and information services for the office, school, home — everywhere.

Many of these services are still a vision of future possibilities for the public at large; nevertheless, the technical community is now gaining practical experience with early stages of many new forms of digital information services. I will try to give some emphasis to both the opportunities and the technical challenges.

The growing ability to manipulate, store, and communicate information in digital form, as opposed to analog, has two advantages:

1. With digital systems, the error rate can be as low as you wish. It's purely a matter of cost. So you can have exact transmission of information.
2. Digital processing and transmission also facilitate easy interchange of information. All the information in computers, archives, typewriters, communications networks — if it's digital — can, in principle, be translated by computer and moved from one system to another. It is this feature which makes the marriage of communications and computing so significant.

But while in principle at least, all systems can be flexibly interconnected, in practice, they can't — until the applications have been tried, and we learn what is economical to do and what is natural for people. And that is why, as computers become a daily part of more and more people's lives, attention is shifting from the microelectronics hardware technology to systems issues — programming, human factors and applications.

Nevertheless, progress in the basic hardware technology must continue at a rapid pace if the costs of the new digital information handling capabilities are to be affordable and attractive.

Small Things . . .

The driving force for the new microelectronics technologies is the ability to make very small things. Microelectronics has been central to progress in computers and communications. Miniaturization is done, not so much for its own sake because computers need to be reduced in size, but because, so far, miniaturization has provided the best mechanism to reduce cost, and also to improve performance. How far can we expect the miniaturization of electronics to continue in the future?

I must emphasize that what is happening is not simply a better mousetrap or a new model automobile. It is so important and fundamental in how this nation and the industrialised world will develop that I wish to tell you what these microelectronic devices are and what their limits to growth are. I believe that we are witnessing the development of a hitherto unimagined capability to extend the reach and power of the human intellect.

Human beings, it has been argued, have a unique capability to store information external to themselves, and to use that information for their advancement and well-being. Information technology — and I use that phrase because 'computer'

conveys too narrow a notion — extends this human capability far beyond any level thought to be possible a quarter century ago.

The computer's spectacular growth — in numbers, in capability, in application — has been one of the great surprises of modern times. Author Jules Verne, who foresaw manned flight to the Moon in 1865, never imagined the computer. Even those closest to our industry have often been unprepared for what would follow. Processor speed, for example, has increased by a factor of 2,000 since the IBM 701 of 1952. And while performance has steadily increased to the 10 million instruction per second range, the cost of carrying out a given set of calculations has dropped by a factor of 180.

The key to this productivity improvement has been microelectronics. It is the marvellous silicon chip that is the underlying device. While the cost of processing a silicon wafer continues to climb with increased wafer size and process complexity, the invention of smaller transistor device structures and the lithographic systems for shrinking the smallest feature size have made it possible to build over half a million circuits at once, on 100 or more chips, all cut from a single wafer.

The experimental chip, seen on a postage stamp, was announced last year and can store 288,000 bits of information. That is four times as much data, in only twice the area, as the largest-capacity memory chips now in volume production. Sixty-five of these chips with the total capacity of over 18 million bits, can be fabricated at once on a wafer 82 millimetres in diameter.

Packaging Costs Reduced

One reason small circuits improve productivity is that we can get more of them on a wafer that costs about the same to make. All these circuits have to be mounted in a case or module as it is called, the modules on a board, the boards interconnected by cables. The real cost advantage of large-scale integration at the silicon chip level comes from the fact that a given size computer uses fewer card, board, and cable interconnections than were required when each chip had fewer circuits. More of the connections are on the chips and within the modules, and the most expensive levels of packaging can be reduced or eliminated.

To illustrate this, let me describe, briefly, levels of packaging using a conventional computer package to define my words. You will see where the industry is heading. One or more chips are mounted on a module. The module is typically a piece of ceramic with conducting lines on it — simply a space expander to connect the very small chip to pins that can be plugged into a card. The card is, again, an interconnection device with wiring to permit all the pins on the modules to be connected to a board. The board also must be connected to other boards through plugs and cables.

Thus, this example illustrates levels of interconnection: on-chip metalization, module wiring, board wiring, and cabling.

In recent years there has been progress in the technology at each level of packaging. The greatest rate of progress in reducing the cost per pin, or cost per connection, has been at the chip level, through microfabrication of chips. But these connections are the cheapest to start with. Advanced technology modules, boards and cables have also shown dramatic progress, as they threatened to dominate the cost in a finished system.

But the primary cost advantage of high-density circuit integration at the chip level comes not from the direct reduction of packaging cost, but from reducing the number of relatively expensive card, board and cable interconnections that would be required when using lower levels of integration on the chip.

The newest packaging technology, for example, dramatically reduces the cost per interconnection — and improves reliability — by mounting as many as 118 chips on a single ceramic carrier. With up to 74 circuits on each chip, a single logic module may contain 45,000 circuits in addition to assorted registers and arrays. Our new model 3081 computer system requires only 16 of these modules for its two central processing units, plus five each in its controller and channels — for a total of only 26 modules. They contain over one million circuits in total.

With such a dense package, the challenge is cooling all these chips, so closely spaced in order to retain the speed improvement that also accompanies miniaturization. Lower capacitance devices, lower line lengths and impedance, all contribute to faster cycle times. Power requirements fall, too, but not fast enough to obviate the need for better cooling technology. And so the chip carrier is mounted in a steel module from which the heat created by the computer chips is removed to a water-cooled jacket. This heat is carried from the chips by aluminium cylinders, which press gently on the back of each chip. The entire module is filled with helium gas to achieve the highest possible thermal conductivity.

Computer circuits for terminals and small systems such as ones used in school classrooms do not demand such complex cooling capability, and very low power transistor circuits will help keep packaging cost down even as the circuit density on the chip rises. Even so, better cooling capability for modules will be necessary to avoid the need for fans and other costs.

Making circuits very small, and using dense, multichip packaging, should also improve reliability, because unreliability comes from the number of connections. The factor of 10,000 improvement in reliability per circuit over the past 25 years is primarily due to higher levels of integration in the silicon technology.

Some Limits to Rapid Progress

Looking ahead, I expect a continued increase in both the number of bits per memory chip, and logic circuits per chip, well into the eighties. Manufacturing costs for silicon wafers continue to rise, as process complexity increases and larger wafers are being processed. But manufacturing costs, on a per-circuit basis, should continue to drop at 20%–30% a year, because more and more circuits, of decreasing size and power consumption, are placed on each wafer.

I expect the progress of the last decade will continue for at least 5–10 more years. This judgement is based on careful study of potential limits to this projection of continued, rapid technical progress. There are four kinds of limits:

1. The first are physical limits, such as thermodynamic sources, noise, and the speed of light — laws of nature we believe to be immutable. Only the speed of propagation of electrical signals is a serious constraint, and new packaging technologies seem adequate to deal with this.

2. The second of these limits are technological limits resulting from the properties of real materials and processes, which relate to fabrication cost and yield. A good example is optical lithography — the photographic process used to make integrated circuits. One cannot use it to make features smaller than the wavelength of the light that is used to project them. Now the practical limit of optical lithography is 1 to 1½ microns, or millionths of a metre, with the most modern tools. Past this point, we must turn to X-rays or to the electron beam in order to fabricate smaller objects.

3. The main technical difficulties associated with LSI are not at the molecules and chip level, but concern the complexity associated with very large-scale

integration. How do you design a chip with 25,000 circuits on it? How do you test it in all its possible modes? How would you repair it if it had a fault? Or how can you design it so that it's self-repairing? To manage this complexity, you need increasingly powerful engineering design systems.

4. Equally pressing are economic limits having to do with return on investment. A typical semiconductor production line that cost one million dollars for the simpler devices of 1965, might cost tens of millions for today's high-density processes. Of course, the modern line has much higher productivity than the older, cheaper one. Design costs are up, too. Some microprocessor chips have cost twenty million dollars to design and develop.

The Programming Challenge

So far I have referred mostly to the central electronics complex of a computer system. The electronics is a small part of an information system, from a cost point of view. The increase in the logical power at decreased cost, made possible by LSI, makes the system increasingly important. In fact, in modern systems this equipment is typically more expensive, in total, than the central processor.

But none of that hardware will work without the professional programming that controls the computer system and defines its capabilities. In this area too, rapid technological progress is being made.

Over a period of ten years, the productivity of systems programming groups has improved about 10% per year. And more important, we have seen an even more rapid reduction in the number of logical errors that are subsequently found in large programming systems. This progress comes about from new programming technology and the use of interactive computer tools for the design, simulation and testing of programming.

But once the operating system and the system facilities for the hardware have been built, there is a still bigger piece of the pyramid yet to be confronted. And this is the piece the user of the computer must undertake — the application programming and the end user's operation. In an educational environment, this might be the course material to assist with the instruction in a particular subject.

Computer users, over a period of years, have found that an increasing fraction of their total cost lies in programming. This includes both the programming built into the computer and the programming done by users themselves, as they evolve from the batch processing of the past to telecommunications — oriented systems, and finally to distributed, complex systems. More circuits and hardware will pay for themselves if they make this programming job more productive.

Another way to look at this: by the mid-eighties, we estimate that the most of renting one million instructions per second of computing capability will fall below the cost of the services of a professional programmer for the same period of time.

In most countries, chronic shortages in programmer skills are predicted for years to come. This means that it will be well worthwhile to use a million instructions per second of computer capability if it saves even on one programmer. Extra performance beyond the minimum required for a particular application, as well as extra memory, can make the programmer's job a lot easier. This is especially true for small, personal computers.

That is part of the programming challenge for the eighties: improving the productivity of professional programmers. We also need to make life easier for users who are not computer professionals. The explosion of interest in personal computers

adds emphasis to this requirement. Over the years, the programming community has worked hard to reduce training requirements, by developing so-called 'high-level' languages. But to an inexperienced person, conventional high-level languages, like PL/I, are certainly not good enough for the casual user.

Ideally, a user should not be conscious of 'writing' a program at all when asking a computer for information. One step in this direction is a novel system called 'Information Dialogues for End User Applications', developed by IBM in Canada to help business professionals. Another approach to making data bases easier to use involves looking at data in terms of tables and relationships. In a relational data base system called SEQUEL/DS, for example, data appears to users in the form of tables. Then SEQUEL automatically navigates the user to the data he wants by specifying what is wanted, not how to get it.

Thus programming is a large part of the greatest challenge facing information systems designers today: providing products that are easier to use and more responsive to human needs. A lot of clever invention is needed to satisfy this need.

Colour and Graphics

Now that sophisticated systems are becoming more accessible, there is both opportunity and necessity to make information systems technology contribute positively to improving the quality of working life. With so many people using computers, they are not all going to be experts. And it's not surprising that some of them occasionally remind us that computers are not always easy to use. That is why the information industry is paying increasing attention to a field of applied psychology called 'human factors'.

The piece of equipment that is changing office work more than any other, and thus drawing the most attention to human factors, is the visual display terminal. One colour terminal, for example, was developed by a team of human factors specialists who not only participated in its design but tested it with real workers of very limited training. They proved that colour not only increases productivity but reduces operator fatigue and provides greater satisfaction with the working experience. Many users of colour terminals are finding that these benefits are real. Colour and graphics displays have a considerable future, and image processing is one important application for them. Graphics displays are finding their place in designing electronic circuits; in publishing, for layout; in medicine, and in satellite image processing.

A new and experimental display technology whose high resolution makes it a candidate for many new applications is the 'laser liquid-crystal' display. Whereas the practical limit of ordinary cathode ray tube displays is about one million picture elements, this projection display technology can handle 100 million picture elements, making it very interesting for displaying a great deal of graphics or text.

However, as graphic displays and all points-addressable printers handle colour, gray scale and even high resolution, somewhere, somehow, all the information I've been talking about displaying has to be entered into the information system.

Today, information is most often entered with a keyboard. But keyboards are not a natural and easy way for many people to communicate. One way out of this dilemma is to use a method of entering information that doesn't require keying at all. For example, the light rays of a holographic scanner, used in a supermarket terminal, can read the striped codes on merchandise held in various positions in space. When information must be key-entered, the most obvious way of improving productivity is to capture the information once and keep it in machine-readable form so it never has

to be keyed again. Every time someone in an office hits one of these keys, it costs their organisation about one-twentieth of a cent. For the same twentieth of a cent, an electronic keystroke can be archived as one byte in a mass storage system for almost 350 years.

Office of the Future

A proving ground for simpler ways of getting information in and out of computers will be the office of the future — that is, an office whose workers are fully supported with tools to make their work easier. The elementary office systems we have today are aimed largely at improving the productivity of secretaries. The challenge now is to provide better support for broader groups of office workers, adding responsibility to their jobs and minimizing tedium.

We have all heard a lot about the information explosion going on all around us. Many of us live in a confusion of information in our offices. One consultant estimates that there are eight file drawers containing 18,000 documents for every white-collar worker. The information explosion, it seems, is proceeding at a rate of two file drawers per office worker per year.

Another part of the problem is that capital equipment investment in the office has been well below that in sectors. In the offices of most of my colleagues, the only technology items to be found are a clock, a telephone, a pocket calculator, and some dictation equipment.

During the 1980s support of the world's 30 million or so office principals — or white-collar information workers — will become a major focus of effort. For there are about nine times as many of these principals as there are secretaries. And with higher salaries for principals, the incentive to improve their productivity is more than 20 times as great. Indeed, in due course, an increasing number of secretaries will become principals themselves.

A second common denominator of tomorrow's office systems will be a merging of data, text, voice, and image information. And when the day comes that an office has paper documents, computer output, magnetic cards and facsimile images, as well as stored voice messages, we have to retrieve and deal with all this information without being conscious of its form when stored. How will we tie it all together? You know how handwritten notes are fastened to a typed memo in today's paper office — we use the familiar paperclip. Obviously, an electronic paperclip will have to be invented. It won't be as simple as bending a piece of wire.

Making sure that producers from various sources will be able to talk usefully to each other is a significant part of the office systems challenge in the 1980s.

Ease of use is also a consideration at the systems level. Thus, data communications is an important subject for ease of use. An example is the matching of information network structures to the needs of real organisations. In the early days, the computer sat behind glass walls and was operated in a batch, off-line mode for everybody, by some central authority. The next step was a time-shared environment with the computer at the top, serving all units but mapped to the formal authority structure. Modern data networks must adapt themselves to the needs of the people, instead of making the organisation conform to the system's structure. Thus, good human factors is a system design problem — not just a matter of keyboards and screens.

Communications in the Eighties

During the eighties, work on communications system architecture will have to focus on three fronts: communications within the establishment; the geographically distributed communications network; and the gateways between them.

First, how should the actual communication within an establishment such as a school be handled? Sorting this out will be a major technical and competitive issue in the 1980s. There are two primary alternatives. One method that allows many devices to share a digital transmission link is the 'contention' bus, typified by Xerox's 'Ethernet'. Here, a device tries to transmit. If any other device is sending the first device waits and tries again. Another approach is referred to in english as the 'token' ring. Here, the device holding the 'token' has permission to transmit. As soon as it's finished, the token passes to another device. The IBM laboratory in Zurich has been studying token ring architecture, which handles heavy traffic efficiently, provides wanted features like error detection and priority allocation, and can be adapted to existing building wiring.

A second area of interest is the character and function of system 'gateways' — nodal connections which transfer information back and forth between a local area network and the larger network outside. For example, how can the network within a school 'knock on the door' of a communication facility between schools?

And the third area of attention is the network service connection establishments — such as Telecom, and OTC, where computers are already beginning to benefit from the public digital communications services and data networks now offered such as Telecom's Austpac and Digital Data Service.

But, of course, the really exciting story in communications is the satellite — with a channel cost that is falling at 40% a year. Satellites are particularly useful for connecting computers, because satellites have very high transmission rates. Ground-based networks require that the flow of data be slowed down, just to transmit it over telephone lines. With satellite communications, data can flow at the same speed at which computers themselves operate. As Satellite Business Systems demonstrates in the U.S., satellites make it possible to combine data processing applications with digital voice communications, office and video applications. And all of this information can be sent and received through small earth stations located right on the customer's property.

During the eighties, satellites and computers will join with cable TV systems and phone lines in delivering low-cost videotex information services directly into business and homes. The terminals will be either ordinary TV sets with adaptors and key pads, or displays designed especially for the purpose. Most of these systems, will be interactive. Initially these systems are very likely to be used for simple business applications — by people who don't need the function, and don't want the complexity and cost — of their own data or word processing system. All these new services provide access to libraries of stored information.

Another revolutionary new medium with this capability is the optical video-disc. Pressed in plastic, a disc costs a few dollars to make. It contains tiny holes, a fraction of a micron long, which are tracked by a small laser beam. The player which reads the disc and displays its images on a TV set has been introduced in the U.S. and Japan as a consumer product, and is used in Australia by General Motors, IBM and others.

One of these discs can contain 54,000 colour TV images on each surface. With digital coding, ten-thousand million bits of information could be recorded on the disc. The contents of a 300-page book could be contained in each square centimetre of

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surface. A computer program can also be recorded on the disc which lets the disc-player display individual frames or motion sequences in response to the user's questions or answers.

Sorting out the application domains for all these new interactive media will be a major activity of the eighties. In our company in Australia, we have made extensive use of electronic devices for self-study education, primarily in what we call Guided Learning Centres and the Field Instructional System, a computer based training system. The advantages listed are readily accepted by participants and their instructors. The Guided Learning Centre using multi-media but centred on the Discovision player is the latest evolution, and has several additional advantages, not the least of which is its novelty value.

Computer Based Training was started by the IBM maintenance engineering training department — known internally as customer service education — as the Field Instructional System. This commenced in 1968 and today some 300 different courses are available. Its technology has evolved and now we are part of a world wide system linked by satellite to the central computer complex in Sterling Forest in the U.S.

A similar program was introduced in the early seventies for administration staff with almost 200 courses now available.

Conclusion

The computer has been called the productivity engine of our time. It is becoming something much more: a responsive personal servant to ordinary people, at home as well as at work. Microelectronics is part of the answer to making information systems both affordable and sophisticated enough for widespread use.

But the innovation challenge is not just technical. It is matching the broad spectrum of new information technologies to opportunities for serving the information and education needs of contemporary society, in the context of a competitive economy. Technology, by itself, causes neither social benefits nor calamities. It only makes them possible.

Whether the societal effect of technology is positive or negative depends on our attitudes and how we use it. And the important thing is not smaller and faster circuits; it is imagination and sensitivity in developing new applications — like how we use personal computers for education, or the videodisc as a low-cost way of distributing digital data.

As I have tried to show, the usefulness of information technologies is extraordinarily sensitive to the human interface. Ease of use, responsiveness to human needs and faithful availability have become the primary challenges facing information systems designers. How well the informatics industry handles these goals will determine whether the emerging information services of the eighties realize their true potential — for improving the quality of life, as well as achieving much-needed productivity gains.

I will close with a quotation from Dr John Pierce, a former Bell Laboratories engineer now at the California Institute of Technology. In a 1968 report recommending government funding of computers on every college and university campus, he wrote, "After 25 years of extraordinary progress, the computer industry is about to enter its infancy."

It is now enjoying an exciting adolescence, with an exciting future still ahead.

COMMUNICATION AND EXPECTATIONS: THE PRESIDENT'S ADDRESS

E.G. EDEN

This year is World Communications Year. During this century there has been an unprecedented rate of growth of knowledge. Knowledge is doubling every five years now. Modern methods of communication have converted the world into a global village.

In fact we are moving from an industrial society into an information society. In the United States already 50% of all people work in jobs which largely or wholly involve the information industry. In Australia this percentage is as yet 30. There are of course regional differences; for example, in Andrew Peacock's electorate over 50% do — whereas in Barry Jones', which cover the Western suburbs of Melbourne, only 25% work in that industry.

The increasing complexity of communication is well illustrated by the changes that have occurred in the methods that we use in expressing our democratic rights. In the great city states of Greece the citizens congregated in the city square and discussed their problems face-to-face. Spoken language was the skill that was required in getting a point of view across. In Australia today the ballot papers are printed. We have to be able to read and we need the technology of printing to have our voice heard. Already computers are used to analyse our votes. Many futurists forecast that every home will have a computer and they will be all connected by phones to larger computers.

In addition to these, there are of course many other types of communication.

I would like to point out some of the problems of the development of the spoken language, printing and computer literacy.

Most of us do not remember how we learned to speak our native tongue, so we assume it was easy — but not so. We can only learn to speak in a social context. We need the stimulation of others: we need people to talk to us. Educational psychology has long stressed the fact that speech is not innate but is socially acquired. Sociologists of education have connected social deprivation with styles of speech that further limit children's development.

Educators still have a task in the area of spoken language. Apart from the need to develop improved language skills, especially where there is social disadvantage, we are now aware of the need to develop improved communication between groups with different ethnic and cultural backgrounds.

Let us turn to printing. As the world population grew so did the complexity of human interaction. Travel and trade increased — more records had to be kept. The spoken word was no longer enough and more appropriate forms of communication had to be developed. In the beginning writing served this purpose. However, writing by hand is very time consuming and in the fifteenth century an extended form of communication — printing — was devised.

At first only the rich could afford books and the new media of printing increased the gap between the elite and the majority. The changes from the early days of printing to mass journalism were anything but smooth. Many technical problems had to be solved. At first there were many different styles of type-face. How often do we see gothic script in print nowadays? But there were other problems to settle: rules of punctuation had to be developed.

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In England it took about 400 years for reading to become universal. The new media eventually penetrated all classes of society and thus being able to read no longer gave power to the elite. Universal literacy was the foundation of modern democracy as we know it.

We are proud of our achievements, yet there are still serious problems of literacy. Our performance has not matched our expectations.

Last, let us turn to computers. The history of the introduction of computers has several parallels with that of printing. At the beginning the equipment was very expensive and complex. Only the rich could afford it. It was thought that computers would increase rather than decrease the gap between the rich and the poor. This need not happen. It took 400 years to achieve universal literacy. I hope it won't take us as long to learn the skills necessary to use computers.

Universal computer literacy is possible, but to date our progress has not been very impressive. In a recent address the President of the Australian Computer Society, Ashley Goldworthy, expressed disappointment that Australia is lagging behind other countries in the field of computer education. This matter is stressed in the 1983 Report of the Schools Commission and the need for the Commission to provide leadership in this area is acknowledged. It is proposed that the government spend $25 million in 1984 to improve computer literacy in schools. This is the single largest allocation recommended for any special programmes in 1984.

The injection of these funds is welcome. The problem now is how best to spend the money. This aspect has been taken up by the Australian College of Education in a detailed response to the issues raised in the Schools Commission Recommendations on computer education.

Some schools and school systems, notably the Education Departments of Tasmania, South Australia and Western Australia, have introduced computers into schools as long as 10 years ago. Their experience is of great interest to the states which are relative new-comers in this area.

Much discussion has centered on appropriate hardware. But of even greater educational importance is the type of programmes or software to be used. Experience in one state should be accessible to others. A national software data bank has also been proposed.

The designing of programmes is a complex matter. It needs experts from several disciplines to work together over an extended period of time. One of the computer languages, for example, took 12 years to develop. There are many different computer languages and decisions have to be made as to which language is the most appropriate one to use in a given situation and which language is best suited for a particular educational need.

It is not surprising that one of the biggest problems is the teaching of the teachers. As yet only a few tertiary institutions have responded in setting up courses in computer education.

There is much to be done. The situation in many areas is fluid at present. The decisions that we make will influence whether computers will turn out to be of great benefit as promised by some. We will serve our children badly if we do not teach them the necessary computer skills.

It may seem that universal computer literacy is a far-fetched dream. Computers can be used for a variety of tasks. They are considerably more radical in departure than some of the other newer media, such as audio-visual aids. We continue to find increasing educational uses for computers. How is it then that we can confidently

advocate the universal use of computers? Did Queen Elizabeth I think that all her loyal subjects — the tillers of the soil — would be capable of learning to read and write?

Many of us have outdated views on computers. They are not all large machines. The personal computers are portable and some are even less expensive than a television set. The children who have used computers in the schools are not afraid of them; they realise the importance of computers to the tasks of the future.

It is not only the young who need to get involved. Computers are becoming easier to use and we all need to get at least an appreciation of the uses and limits of computers, otherwise it will be difficult for us to be involved in shaping our future.

In conclusion I would note that just as knowledge has increased over the years and society has become more complex in all its ways, so have the number and variety of educational problems. For example, compare the number of diverse topics listed for discussion at this conference with those from previous conferences.

In reflecting on the 1983 conference theme *Educational Expectations — Promise and Performance* I am left to wonder how the next generation will judge our performance as educators? Will they say we left our children in the wilderness and have not given them the skills necessary to take their place in the information society?

It is a privilege to live at a time when there are such great changes taking place. Let us take up this challenge.

EXPECTATIONS OF RESEARCH IN COLLEGES OF ADVANCED EDUCATION

J.G. SEKHON

> The extent to which the central institutes should be engaged in higher degree work should be limited. It ought to remain one of the distinctions between them and the major universities, but it is very difficult to foresee how present tendencies could be reversed. *My own prejudice is that doctoral degrees ought to be restricted entirely to universities* but that within the college sector the central institutes should offer appropriate masters degrees. [emphasis added] (Beswick, 1980)

It would have been possible to have considered the conference theme *Education Expectations: Promise and Performance*, as it applies to colleges of advanced education (CAEs), from four perspectives which exemplify their distinguishing and distinguished contribution:

- the provision of programmes which have a strong vocational relevance;
- a primary emphasis on teaching;
- staff participation in applied research; and,
- the supply of expert advice to governments and industry.

Instead, this paper attempts to provide as effective a rejoinder as possible to the 'prejudice' encapsulated in the quotation above.

As Beswick has done, this paper focuses attention on that significant subset of CAEs which constitutes the central institutes of technology. The decision to confine attention to these institutions is taken for many reasons, not least that they are major multi-purpose institutions which offer a range of courses at first and master's degree levels.

This paper challenges the premise advanced by Beswick and argues the case for the introduction of doctoral programmes at the major colleges, which are, as Beswick puts it, "geographically and functionally properly described as central institutes of technology". The paper delineates the need for doctoral studies and shows how such central institutes are admirably placed to meet the need.

Aims and Objectives of CAEs

To understand the proposals put forward, it is important to perceive clearly the educational aims and objectives of CAEs. The colleges were established with the main purpose of providing vocational education. Their principal *raison d'être* is to educate students in a wide variety of skills needed by our society. The necessary corollary to this is that CAEs should have close relationships with industry, commerce and government agencies.

The primary and overruling purpose of the CAEs, then, is the training of students to staff some professions, the public service and industry. Undeniably, universities too are concerned with vocational education: agriculture, commerce, dentistry, education, engineering, medicine and law are all examples of professional vocational education with which universities are concerned. Departments of Adult Education or Continuing Education also cater for some vocational needs (e.g. computing courses). Though both the CAEs and universities participate in the provision of education for the professions, there emerges a significant difference in the perception of their particular and central tasks.

The Function of Universities

Universities have a further and presumably dominating function as well — the disinterested pursuit of learning, the discovery and expansion of knowledge for its own sake and not as a means to anything else. If there is an external mark of a university, it is the continual production of new knowledge and the acquisition of knowledge. Philp *et al.* (1964) underline this:

> In a fundamental sense universities have an unchanging duty, a duty so important that, if for any reason a university has failed to discharge it, then that institution has ceased to be a university in anything but name. This duty can be summarily defined as the task of adding to knowledge and disseminating it at the highest level as effectively as possible, freely and without constraint.

Partridge (1972) describes the function of university education in this manner:

> . . . the teaching of basic humanistic and scientific disciplines in a thorough and advanced manner should be central to the concept of a university education. . . . One can say, perhaps, that it should be a defining characteristic of university education that teaching is so conducted that the achievement of professional competence emerges from solid and disinterested study of basic disciplines: the study of the disciplines is not tailored or curtailed to fulfil the conditions of minimum professional competence.

True, there are areas of overlap between universities and CAEs, but the latter are more diverse and more unashamedly vocational in their teaching than are the universities. The CAEs offer a different, alternative approach to higher education from universities, where the approach to teaching, even in their professional schools, is characterised by, in the words of Partridge, "deep scholarly interest and intellectual exploration". However high the intellectual demands it makes or the standards it sets, a vocationally-orientated institution aims to equip students to do particular jobs, known beforehand, and the courses are designed to ensure competence. A university, on the other hand, is not regarded as an institution to turn out people equipped merely to step into particular jobs.

As Lord James (1968) has said:

> The function of universities is not simply to respond to social needs, but to transform them, not simply to give the community what it wants, but to be one of the means of ensuring that it wants the right things. . . . At their best places of higher education in the modern world should be among the chief custodians and interpreters of values in society.

The Development and Application of Knowledge

The argument so far developed must not be taken as implying any denigration of what many would regard as the most important contribution which universities can make — that of adding to the knowledge of the world. However, in the interests of the nation, the central institutes have an added responsibility — that of adding to knowledge and developing new ways of applying that knowledge.

Higher education is distinguished from training, not by its subject matter, but by the kind of purpose to which it seeks to make an understanding of the subject relevant. Higher education trains an ability to perceive relationships which afford understanding in many contexts. As a student discovers for himself new contexts in which to apply his understanding to perceive a familiar pattern in unfamiliar events he has begun to master the creative intellectual skills which, we believe, universities and, more especially, the CAEs are there to teach.

Avoiding Duplication

Within some government department, some sectors of the Australian education system and some educational establishments, there is apprehension that the provision of doctoral education by central institutes may precipitate a dilution of the concept of university education, an erosion of the accepted notions of the essence of a university. There are fears that the central institutes are destined to become pale images of, or second-rate, universities: by remaining inflexibly committed to the introduction of doctoral programmes (regarded as the exclusive province of universities), it is felt that the CAEs may be perceived as moving inexorably in the academic drift towards the pattern and values of a university.

The central institutes, as indeed the other CAEs, are acutely aware that they can have less of a future if they aspire to becoming mirror-images of the universities. They cannot expect much of a future unless they undertake provision of the kind of learning and education that the universities are neither equipped for nor funded to provide.

There is merit in the view, especially in these times of diminishing resources, that uneconomic duplication should be avoided: it no longer makes sense, if ever it did, that each institution should seek to develop the range of its own offerings with no regard to the intentions and practices of sister institutions. However, Australia will be much the poorer if genuine educational alternatives do not exist. The advanced education sector should enjoy a major responsibility in the development of doctoral programmes where it has academic strengths and specialisms which are not found in universities.

Initiatives

More does not, as some would have us believe, mean worse, though more of the same undoubtedly does. Contraction may well demand somewhat different initiatives from those required when enrolments are increasing or stable. Ross (1981) urges that "though today contraction is the topic most often discussed in our common rooms, we should be thinking less of persuading more to take what we at present provide and more of extending the range of offerings".

Frederick Jacobs (1979), referring to the "new populations", encourages educators to provide "better services to populations for which there are not presently existing structures and services". He writes:

> . . . educators and their institutions must learn to 'unbundle' or disaggregate the services they provide in a way that will make it easier for people who are not engaged in full time study to take advantage of services offered. For too long, educational institutions have run on a promise of 'fixed price menu'; that is, if you want to attend you must buy all of its services.

The attempt, then, by the central institutes to provide doctoral education must be seen simply as an initiative to reach in new directions for new constituencies as well as to meet the changing need of a new clientele for doctoral studies. As Ross (1981) acknowledges:

> The university road is not the highway for everyone and when one is seeking for alternative pathways one is looking for programmes which are occupational-based rather than subject-based, applied rather than theoretical, criterion-referenced rather than norm-referenced, skill-based rather than ideas-based, programmes which emphasise know-how rather than know-that.

The kind of doctoral programmes that central institutes have in mind can be expected to present a reasonable degree of differentiation of function and purpose, as this paper will show.

The view that higher degree work in central institutes should be limited, because it ought to remain one of the distinctions between them and the universities is, we find, neither persuasive nor convincing: it is an arrogant suggestion, based on an hierarchical concept of education in which the so-called 'best' and 'most prestigious' institutions offer graduate programmes and derive the reputation as centres of excellence.

Advanced education was created to provide an alternative to university education. Because it was established as a partner to the universities in higher education, it has assumed many characteristics of higher education nationally and internationally, while retaining its own special characteristics deriving from its charter.

An unwillingness to contemplate doctorates in the advanced education sector, even as an eventuality arising from the dynamics of development of a higher education institution, clearly indicates an attempt to constrain the development of advanced education, an attempt which will lead to the creation of an inferior sector. And, in the institutes of technology, as recognised in the Williams Report, Australia has a massive investment in equipment, buildings and professional staff which must be deployed in advanced research training.

There is no reason why the major colleges should not offer doctoral programmes in areas in which they are the pace-setters. Nor should any barriers be placed that prevent these institutions from striving for excellence in the particular tasks that are theirs. *Equal but different* — a slogan applied to the CAEs — need not be a chimera: academic values need not be sacrificed in giving education a vocational thrust. The Committee on Open University (1975) echoes this:

> . . it is desirable for different institutions to have different educational objectives. This is not to advocate a hierarchy of institutional objectives and values with university objectives and values at the peak of the pyramid; rather it is a pluralistic approach with emphasis on difference and not on rank.

Economic Growth

Sustained economic growth cannot be created by governmental edicts, by monetary policy or by tax cuts alone. Technological literacy of a high order is crucial to our future industrial competitiveness. The need to ensure that the moving frontier of facts is fed into professional practice has never been more urgent in our nation's history: the advancement of industrialisation requires the application of the most recent advances in science to technology. The birth of the CAEs must be seen, in part at least, as evidence of the failure of the universities to bridge the great divide that still separates education and industry. The move by the central institutes to cater for doctoral students whose destinations are industry and commerce may be viewed as an attempt to span the gulf left by the universities' inability or failure to respond to national vocational concerns through appropriate educational policies. The costs to the nation, for ignoring or failing to meet the need to supply the market with men and women trained to exploit to the full the possibilities opened up by the technological revolution, will be high indeed.

Links with Industry

The institutes of technology have developed close and continuing relationships with industry and with employing and professional bodies. Their staff give extensive

service to industry through applied research and consultancy, thereby demonstrating first-hand experience with emerging technologies and frontier applications to industry, commerce and relevant professions. There are some faculties of engineering which have specially selected staff from amongst senior industrialists who, working on a voluntary basis, further enhance the degree of cooperation between industry and academe. Simply put, the significance of these links with industry lies in the fact that central institutes have been prevented from developing an 'ivory-tower' attitude. To be sure, many a university has developed a network of industrial and business relations with the communities in which they lie. They have taken to heart the words of Whitehead (1936): "The careful shielding of a university from the activities of the world around is the best way to chill interest and to defeat progress. Celibacy does not suit a university. It must mate itself with action."

University academics advise industry, provide consultancy service and in many other ways lower the ivory curtain between campus and the real world. However, against the fact that universities are becoming increasingly responsive to community, agricultural and industrial needs, we must set the deep conviction of some academics caught in Poynter's (1982) words:

> . . . Contract research will involve undue restriction on the university's proper function to pursue a problem wherever it might lead and to publish the results of the research . . . The university must avoid becoming simply a servant of short-term particular interests in research to the neglect of its basic international responsibility to further knowledge.

There is no denying that human knowledge advances as much through the solution of practical problems as through basic research and that there is a connection between the pursuit of fundamental research and socio-economic progress. The dichotomy between basic research and applied research is difficult to sustain. Yet, it needs to be recognised that, in the perception of their fundamental tasks, universities and CAEs are as different from each other as chalk is from cheese.

Parity of Esteem

The CAEs have provided a real and attractive alternative in higher education and, as would be expected in the dynamic of growth, the process of evolution has been at work. The educational programmes provided by the central institutes have evolved, developed and matured to an extent where their academic stature is now squarely established in the expectations of professional bodies, higher education institutions, employers and the general community. The colleges have met, and continue to meet, the demand for excellence in undergraduate and graduate studies and have satisfied the scrutiny of external accreditation.

The application and absorption of high-level technology is so crucial for many sectors of industry and commerce that it presents at once a challenge and an opportunity to the institutes of technology. The failure of these institutions to respond to the educational aspirations of technologists and the needs of employers would be a prescription for mediocrity in the industry-commercial world. This is the measure of community confidence in them and this is the measure of their task. As far back as 1968 Partridge observed with uncommon perception:

> Perhaps it will be impossible permanently to restrain the great metropolitan Institutes of Technology from training students for the Ph.D. degree and from fostering research in such areas of applied science and technology, where they may be comparable in strength to universities.

The Need for Doctoral Programmes

There may be advanced several arguments which lend support to the belief that doctoral education should be provided by the central institutes.

1. Number of Doctorates in Industry

Figure 1 displays the fluctuations in the number of Australian higher degrees in mathematics and statistics in the years 1959–1980. There is an indication of a decline in the number of research degrees conferred — a fact which is disturbing, particularly because of, to quote the words of Douglas (1982), "the long lead-time involved".

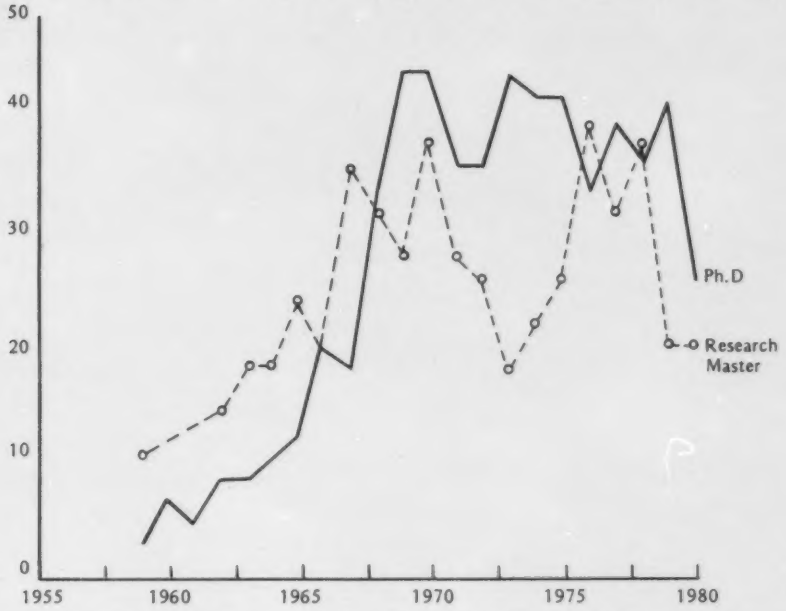

Fig1. Australian Higher Degrees in Mathematics and Statistics: 1959–1980
Source: Douglas (1982)

The number of professional engineers who hold doctoral degrees and who work in Australian industry not only appears to be small compared to the total number of engineering doctorates in Australia, but it also appears to be small in proportional terms when compared with the numbers employed by industry in the USA and most European countries. As far as we can determine, no serious attempt has been made to discover the reasons why Australian industry has not made greater use of engineers with doctoral qualifications but the reasons probably may be any or all of these:

(i) Australian engineering tasks are different from those ecountered in other countries. For example, we tend to import much of our technological know-how.

(ii) Industry does not recognise the opportunities open to it by using graduates from university-based doctoral programmes to find solutions to problems, actual or potential, it faces.

(iii) The skills of graduates from university-based doctoral programmes fail to satisfy, either wholly or in part, the needs of industry.

Whatever the reason may be for Australian industry failing to employ a larger number of engineers with doctoral qualifications than it now does, it is apparent that the effectiveness and competence of the profession could be enhanced if the present picture were to change. We believe, for example, that if a doctoral programme were

to be directed specifically towards the needs of industry and were to be presented so as to ensure that the *practice* of engineering was paramount, industry and the community would gain by benefiting from greater productivity and more appropriate development and application of high level technology. Also, such a development would lead to a better understanding of the consequences of technological change and innovation; it would provide a sounder basis for the transfer of technological concepts from basic research activities to industrial applications.

The desire of major CAEs to mount doctoral programmes must be seen as an attempt to arrest the perceived downward drift in the number of doctor's degrees awarded by extending an alternative route to doctoral education.

2. High Level Professional Education

The single most important argument in relation to the need for doctoral programmes in institutes of technology is the urgency to provide opportunities in Australia for the highest possible education for scientists, mathematicians and engineers to shoulder new responsibilities in professional practice.

The need to educate (at the doctoral level) selected students who will be able to assume effective leadership in fulfilling a new dimension of professional purpose may be perceived to flow from a set of four realities:

- the exponential growth of available information in the mathematical, scientific and engineering disciplines;
- the rising levels of complexity and sophistication required to make significant technological progress;
- the increasing dependence of our socio-economic system on technical feasibility; and,
- the daunting problems of environmental control.

This new dimension of professional expectations calls for the development through education of the capacity to deal with the whole of a problem by the creative and optimum synthesis of relevant information and governing constraints. The new dimension calls for an approach which is markedly different from that represented by the traditional Ph.D. programme, where the focus is primarily on research in a more restricted area of investigation.

The proposed doctoral programmes will pivot on practical problem-solving of direct concern to industry rather than on a discipline-oriented research which may or may not be addressed to the needs of industry and commerce. The need for programmes with problem-solving emphasis is not a peculiarly Australian experience: other industrialised nations as the United Kingdom and the United States of America have perceived a similar need — a fact amply borne out by the development of such provision as the D.Eng. degrees in the United States, the Ph.D. degrees by course work in Total Technology at the Loughborough University of Technology in Britain, and the Ph.D. degrees, with the imprimatur of the CNAA (Council for National Academic Awards), at the Polytechnics.

3. A New Clientele

The educational philosophy which forms the basis of educational programmes at the institutes of technology is that known generally as *co-operative education* in which the educational process is seen to be a joint venture between the Faculty and

(engineering) practitioners operating outside the colleges. Co-operative education has enjoyed enormous success in North America and is growing strongly in the United Kingdom, particularly following the Finniston Report.

By applying co-operative education principles to their undergraduate and master's degree programmes, the institutes of technology have firmly established themselves as some of the foremost centres of professional education in Australia. In addition to rigorous requirements for academic achievement, all engineering students, for example, must satisfy concurrent industrial experience requirements. The duration of the NSWIT Faculty of Engeering's baccalaureate programmes is six years which includes periods totalling at least one hundred and forty four weeks spent in industry.

In the same way, these institutions would be expected to attract students for doctoral studies from a pool of graduates who have significant experience in the industrial arena. This will be in marked contrast to the traditional pattern of student flow to doctoral education in the universities where the majority, if not all, of the students have had very little, if any, exposure to the realities of the industrial world.

4. Perceived Inadequacies in Traditional Doctoral Programmes

The perceived shortcomings in the present doctoral programmes may be considered to be:

- They attract candidates who are recent graduates with little or no industrial training or experience.
- Many recent university Ph.D. graduates in industry have genuine difficulties with mathematical modelling and problem-solving. The employers in industry feel that students have a raw deal from university departments of mathematics, where, in their view, the supreme good is the replication of the species *mathematicus academicus*.
- The discipline-oriented emphasis in the presently-conceived doctoral education fosters narrow specialisation: it puts a premium on intensiveness at the expense of extensiveness. Such intense and narrow specialisation inevitably leads to narrow perspectives and 'tunnel vision'.
- The failure of many universities — particularly in the departments of mathematics and engineering — to make use of the skills and know-how of industry in the structure and implementation of doctoral programmes implies an impoverishment and a deficiency. The bringing together of industrialists and educators round a table provides a mechanism for translating different values and perspectives into an effective course of action. Adjunct or industrial professors can provide important imputs: designing programmes, teaching courses, conducting seminars, and supervising dissertations.

The industrial training requirements for first and master's degrees have led to a close connection between industry and faculty. Additionally, academic staff undertake regular liaison with industry: they provide consulting services for industry both directly and indirectly through the institution's consulting organisations, and the faculty has special staff selected to work with senior industrialists on a voluntary basis in an on-going programme of liaison between faculty and industry. This faculty-industry liaison is of special importance in

- structuring the content of courses;

- determining the directions taken by undergraduate and graduate research and development work;
- establishing and maintaining a professional relevance for the work of the faculty as a whole; and,
- preventing the faculty from developing an ivory-tower attitude and approach towards its education mission.

5. *Intellectual Stimulus and Excitement*

Many academics share a deep conviction that teaching and research fertilize each other. The view is espoused that the advancement of knowledge cannot be separated from its transmission; the most vital thing to communicate is precisely enthusiasm for the on-going process. The positive effect that research has on teaching has been described by A.J. Scott in attractive and startling terms:

> He who learns from one occupied in learning, drinks of a running stream. He who learns from one who has learned all he is to teach, drinks the green mantle of the stagnant pool.

And, the stimulus and intellectual regeneration that comes from the impact of mind upon mind is inestimable.

6. *The More Efficient Use of Resources*

The academic staff of the institutes of technology have established reputations in their fields. The methods and procedures for the selection of academic staff place heavy emphasis on experience in industry. The technical support staff represent a pool of extraordinarily highly skilled people, too. The development of 'technology parks', innovation in course design, liaison with employers and such specific achievements as the nomination of the Royal Melbourne Institute of Technology to participate in the Research Centres of Excellence programme — these are sizeable, laudable accomplishments.

The institutes of technology have established enviable reputations as sources of knowledge and experience especially apposite for the research needs of industry. Through their expanding consultancy activity, they are helping to narrow the gap between scientific research and industrial innovation. The process of innovation in industry is fostered and developed by other mechanisms such as staff exchanges, co-operative ventures between colleges on the one hand and industry and business on the other, and the presentation of short extension courses. It is only by maximising the community's use of the professional staff, equipment and training in these academic institutions to solve technological and research problems that Australia can hope to be competitive in industrial and technological growth. Present policies do not adequately recognise the potential of the CAEs, with their special interest in applied research and their capacity to take the interdisciplinary approach, so necessary to the innovative solutions of modern problems, to contribute to Australia's research effort. We see it as essential that these policies should become more forward-looking.

The Nature of Doctoral Programmes

As there is no precedent for the development of doctoral education in the major CAEs, the Total Technology Ph.D. programme at the Loughborough University of Technology in the United Kingdom could provide a useful model: in the absence of

an Australian programme on which to model, we must depend largely on our untested views and on the experience of colleagues overseas.

1. Total Technology Ph.D. Programme at Loughborough

The Loughborough Total Technology (TT) Ph.D. programme has been running since 1974 and collaborating companies include Plessey, Pye, RHT, Metal Box and Wilkinson Sword.

What is TT? TT is a fresh approach to the Engineering Ph.D. It embraces the many functions of engineering — research, development, design, planning, production, operations, maintenance and marketing — and also the management skills needed to weld them into a successful whole.

About ten universities and polytechnics offer TT Ph.D. programmes as preparation for a successful career in industry. A typical TT student carries out a research project on an industrial problem in a firm under joint academic and industrial supervision: immerses himself in a group activity such as a design project; and attends lecture courses in related technical subjects and also in finance, economics, marketing, and industrial relations and sociology.

The normal procedure at Loughborough is for the student to enrol in the one year M.Sc. course in Manufacturing Systems, Management and Development, offered by the Department of Engineering Production, in the first instance. On successful completion of the M.Sc. examinations the student then moves to a sponsoring company to spend two years on field research.

The research topic involves the analysis and solution of a genuine manufacturing problem and the student is supervised by both university and company staff. It is also possible, however, for the student to complete the two year research segment within the university laboratories.

2. Goals of Proposed Doctoral Programmes

As the research functions of central institutes are industry-oriented, the doctoral programmes will have a vocational thrust, differing significantly from the structure of the traditional Ph.D. programmes.

The purpose of the proposed doctoral programmes is to educate a problem-solving generalist with high level skills across a relatively broad band of subject areas pertinent to professional engineering. For the non-academic the narrow depth of research has no parallel in anything that his professional career will require. The civil servant, the lawyer, the executive, the engineer and the industrial mathematician may need to know how to master some complex brief, but will never spend three years in pursuit of a single theme.

Since there is a growing need for truly innovative technical approaches that satisfy economic and social issues, these programmes will inevitably draw on the full spectrum of academic skills and knowledge, as well as demand a heightened appreciation of the impact of sociological, environmental and biomedical parameters in industrial problems. As there is considerable stress on interdisciplinarity, students will have access to staff from all faculties whose disciplines impinge on their work. The academic staff of diverse faculties will make inputs into coursework and give direction and guidance in the preparation of project reports.

The main objective of the doctoral programme is to produce a graduate whose educational development demands the scope and quality associated with traditional

doctoral studies, but with special emphasis on the practical problem-solving approach in an interdisciplinary framework.

3. Industrial Doctoral Programmes

The industrial doctoral programmes at the central institutes may be expected to have three main strands:

- A *compulsory core* of subjects from advanced mathematical and engineering disciplines so as to provide the necessary intellectual apparatus of an advanced nature. Examples of topics that may be considered here may include engineering systems, engineering economics, engineering management and advanced analytical, statistical and numerical methods.
- A *selection of electives*, preferably in a sequence of related subjects, from fields outside of mathematics and engineering — biology, chemistry, economics, management, physics, urban affairs, and law. The subject-mix for the electives will depend largely on the academic record of the student, the nature and extent of postgraduate industrial experience, as well as the project topic.
- A *project* which will be problem-oriented: it should show evidence of capacity to evolve solutions to genuine applied problems to which have been added realistic constraints — environmental, sociological and economic.

Summary

The central institutes have expanded and developed in the way they have precisely because they have met long unsatisfied needs of students, employers and professional institutions and proved to be capable of meeting new needs as they arose. The needs of the future will be for graduates who can offer exceptionally high levels of professional competence and these needs will be reflected in the demands of professional fields and in the personal aspirations of students. The door should not be closed to the establishment, in the not distant future, of doctoral programmes in colleges which exemplify specialised research strengths, as we believe that doctoral education is a proper and natural development of their charter.

Acknowledgement

Associate Professor A.F. Horadam has given me his judgment on a number of issues raised in this paper. I am very grateful to him for the uncommon care with which he read the paper and for the inordinate expenditure of time and effort. This tribute, however, does not imply a commitment on behalf of Professor Horadam, nor do I wish to burden him with responsibility for the views expressed.

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MAKING A POLITICAL ISSUE OF TERTIARY EDUCATION

G.W. JACKSON

Introduction

There is a very real need to raise the political priority of Australian tertiary education and thereby increase the likelihood that greater resources will be made available by the Commonwealth Government. Over recent years, there has been no real growth in resources devoted to universities and colleges of advanced education. Support for capital programs (buildings and equipment) has seriously declined.

The issue considered in this paper is: what activities should be undertaken to raise the political priority of tertiary education?

A number of observers have commented on the low priority of tertiary education. Professor Gareth Williams has suggested that the loss of political priority is one of the most critical issues facing universities and other tertiary institutions. He has said that the loss of political priority is particularly evident in Britain and Australia where it is no longer believed that higher education contains the key to social equality or economic growth (Williams, 1982).

Two Australian vice-chancellors have commented separately on the issue. Dr McKinnon (1982) of the University of Wollongong has observed that there is little political sympathy for universities at the federal government level. He says this is possibly because of the perceived failure of the universities to address the problems of society. It thus may well be that the institutions have partly themselves to blame. If such is the case, tertiary institutions need not only to promote themselves and their products better, but they may also need to improve their products.

The former Vice-Chancellor of the University of Sydney, Sir Bruce Williams has said:

> The climate of opinion is not favourable to universities. There has been a fall in age participation rates that is not entirely due to the reduction in financial support for students and few government ministers or senior civil servants admit to much admiration of the universities and their works. (*The Australian*, 18 Aug., 1982:7)

This comment was made towards the end of the Fraser Liberal Government. It remains to be seen whether the situation will be much different under the Hawke Labor Government.

The blame for the low priority given to tertiary education rests not only with the Government and the Public Service; the public also has not given it high priority. The participation rate of our young people in tertiary education compares poorly with other advanced countries. For example, while Japan has more than 80% of the population still receiving education at the age of 17, Australia can barely muster 40%. Furthermore, a recent report of the Commonwealth Tertiary Education Commission (CTEC) has shown that the percentage of young people in higher education in Australia dropped 13.6% between 1975 and 1981 (*Canberra Times*, 17 Dec., 1982:10). Interestingly, there has been a surge in applications for tertiary education places in 1983.

As a result of the low political priority, the funding of tertiary education has suffered seriously in recent years. This could be demonstrated in quantitative terms by quoting the relevant figures. However, it should suffice to quote the observations of the former Liberal Government senator, Chris Puplick, who has admitted that "Governments have ruthlessly cut funds to universities in recent years". Puplick also

observed that "the public has taken this without a murmur". He also suggested that the Australian universities do not have any political power, or indeed public status (*The Australian*, 9 March, 1983:19).

It is important to recognise that tertiary education must be made into a political issue. The priority given by governments to an activity is related to the political clout which the activity carries. Tertiary education by the nature of its purpose deserves to receive high priority. However, that priority has to be earned; it will not be automatically granted by governments or the public.

Some Ideas on the Problem

If tertiary education is to receive high priority, it is obvious that the tertiary institutions must produce high quality products and for the purpose of this paper, it will be assumed that this is happening. The questions which need to be considered are: how might tertiary education best be promoted and in what arenas? If additional resources are to be obtained, the promotion needs to be directed towards those people who are the real decision makers about the funding of tertiary education.

Within society, there are particular groups which exercise power in relation to tertiary education. Harman (1981) has said:

> Higher education in Australia today is subject to a surprising range of different political influences and constraints. There are five major categories of influence — higher education interests (i.e. interests of people in higher education institutions), professions, community, business and labour, and government. Each of these has considerable power, although often in different ways or with regard to different policy areas . . . But overall, by far the most powerful political influences and constraints on higher education come from government, both federal and state.

Governments operate at the federal, state and local levels, but in relation to Australian tertiary education funding, and therefore power, rests with the federal government. In relation to universities and colleges of advanced education, all government funding comes from the Commonwealth Government. It is only in relation to technical and further education that the state governments have a substantial funding role.

Within the Commonwealth Government arena, a number of key areas of power or influence may be identified in relation to tertiary education and it is these areas which tertiary institutions need to influence. The areas include:

(1) the Cabinet;

(2) Commonwealth parliamentary committees; and

(3) particular Commonwealth departments and instrumentalities, including the Departments of Finance, and Education and Youth Affairs, and the Commonwealth Tertiary Education Commission.

These areas ultimately respond to influential groups in the electorate. A problem for tertiary education is that its own 'community' is very dispersed throughout the electorate. And yet, ultimately, it is amongst the electorate that the political priority of tertiary must be raised.

Tertiary education is not a vote winner with the electorate at present but this situation could be changed. Certainly if the electorate could be convinced of the importance of tertiary education, for example, because of its impact on the nation's economic future, the message would eventually get through to the Commonwealth Government.

If tertiary education is to gain greater political priority and greater support it must be made into a political issue. The importance of tertiary education must be established firstly in the minds of the public at large and, at the same time, in the minds of those people who exercise power and influence over the funding of tertiary education. If the public comes to accept the importance of tertiary education, those who exercise power and influence will be encouraged to attach greater importance to it.

The Current Promotion of Tertiary Education

It is useful to consider what is happening currently in the promotion of Australian tertiary education. There are a number of techniques or activities which the tertiary education sector might use, but the indications are that they have not been used well. These techniques and activities include marketing, public relations and lobbying.

Marketing and Public Relations

The shortcomings of universities in marketing and public relations were noted by Ranald MacDonald, Managing Editor of David Syme & Co. Ltd., publishers of the Melbourne Age; "There are many specific skills of marketing and image-building now available. Universities, by and large, have not really utilized them." He suggested that there are plenty of people in the universities who could "express the philosophical principles which have underpinned universities for centuries. . . ." but the message was not being heard (ANU Reporter, 27 Aug., 1982:2).

MacDonald believes that universities should make a deliberate effort to encourage excellence thereby getting an adequate share of the mass media. He has said that the community perspective of universities was confused and where there was confusion, there was often recrimination and disillusion (*Ibid.*)

At the Conference of University Governing Bodies organised by the Australian Vice-Chancellors Committee in 1982, some participants spoke about the need for universities to 'engender good public relations' to counter general public apathy. What mostly appeared in the press, according to Professor Karmel, was 'bad public relations'. He suggested that the present antagonism to higher education was not to be cured by public relations image-building. He believed that it was up to the universities themselves to improve their public image by proudly displaying their wares to the public and the government. (*Ibid.*: 2). In the light of the earlier discussion in this paper, the reference to 'the public *and* the government' is particularly appropriate.

There is an important distinction which should be drawn between promotion based purely on image-building and promotion based on worthwhile achievement. The latter is obviously to be preferred and there are plenty of achievements which can be promoted.

A number of universities and colleges of advanced education has developed initiatives aimed at improving their image within the community. University-owned businesses like the Australian National University's research marketing group, ANUTECH, are helping to promote a wide range of academic talent to external organisations, in government, business and industry (Armstrong, 1982).

Promotion of tertiary education can and has also been undertaken by the Commonwealth Government. When the Government became concerned about participation rates, the Department of Education, in late 1982, advertised nationally to encourage students to remain in education rather than enter the workforce. The campaign was estimated to cost about $400,000. The public relations firm Eric White

Associates was engaged to conduct a program designed to raise community awareness of education options available to young Australians (*Canberra Times*, 17 Dec., 1982:6). This particular public relations effort caused much comment about whether it was the most desirable use of money available to education. However, it illustrates that the Government itself can engage in public relations to promote tertiary education.

Lobbying

An important part of the political process is direct representation of interests to political decision makers. This representation, or lobbying, is practised by most major industries and community groups. While lobbying may have undesirable connotations in the minds of some people, it is a widely practised and proper part of the political process.

Lobbying should be used to press the case for tertiary education. However, many well placed observers believe that the tertiary education sector has not performed well in this area. The need for lobbying in respect to tertiary education was well illustrated by Barry Jones when he was Federal Opposition spokesman on Science and Technology. Jones stated:

> . . . there are a lot of people in the Commonwealth Parliament who really take the view that tertiary education is strictly a matter of caviar for the general; just a kind of unnecessary and frivolous way of spending public money. (Johnston, 1982:8)

Jones said that tertiary education lobby groups had no alternative to adopting the tactics of other special interest groups. He felt they should drive home that education was not just the icing on the cake but an integral part of a developing modern society. This comment can be related back to the earlier reference in this paper, to participation rates and the comparison between Australia and Japan. Jones also has some useful advice to offer on approaches to lobbying. He said:

> Members of Parliament don't always vote the way you want them to, but you have still got to maintain a high degree of personal contact. It's got to be done on a personal basis, rather than putting stuff in the mail and assuming it hits the spot. (*Ibid.*).

Senator Kathy Martin has been a member of the Senate Standing Committee on Education and the Arts and a member of the Liberal Government back-bench committee on education. She has claimed:

> Although the university heads had delivered themselves of some 'pretty vigorous opinions' on Federal policies over the years, they did not act as a lobby group — as she would have thought natural. They claim they are something else, a group concerned with upholding academic standards. (*The Australian*, 12 May, 1982:12)

Senator Martin, like Barry Jones, has stressed the importance of personal contact between senior officers of tertiary institutions and members of parliament. She is reported to hold very strong views about the need for university and college administrators to invite more politicians — especially at the Federal level — to 'go along to the campus and just get to know them'. This, she points out, is done by organisations like the stock exchange and business lobby groups. Administrators of tertiary education institutions may not like to see themselves as being in the same camp as stock exchanges and business houses. However, to gain government attention and support, they must compete with many types of interests.

There are signs that tertiary institutions are realizing the need to improve their representations in the political arena. The Chairman of the Australian Vice-Chancellors' Committee (AVCC), Professor David Caro, has said: "We want to make sure that the universities' points of view are conveyed to politicians, ministers [illegible]o, as much as we can, to the press.' (*The Australian*, 26 Nov., 1981:6). He went on to

say that the vice-chancellors have kept too low a profile during one of the most difficult times in their history.

This statement was made at the time when it was announced that the Secretary of the AVCC would be given a wider public relations role and the support of a research officer. The new approach was prompted by the experience of the universities with the Review of Commonwealth Functions ('razor gang' report).

Other groups within tertiary education have realized the importance of political activity. Australian tertiary staff and student organizations have formed the Higher Education Round Table (HERT) which lobbies politicians and takes issues to the public through publicity campaigns, as it did for example in the 1983 Federal election campaign. HERT is a joint forum of the Federation of Australian University Staff Associations, the Federation of College Academics, the Australian Union of Students, the Council of Australian Postgraduate Associations and the Australian Teachers' Federation. HERT has recently been lobbying for a voice on the Commonwealth Tertiary Education Commission and more representation on its member councils (*The Australian*, 6 April, 1983:20).

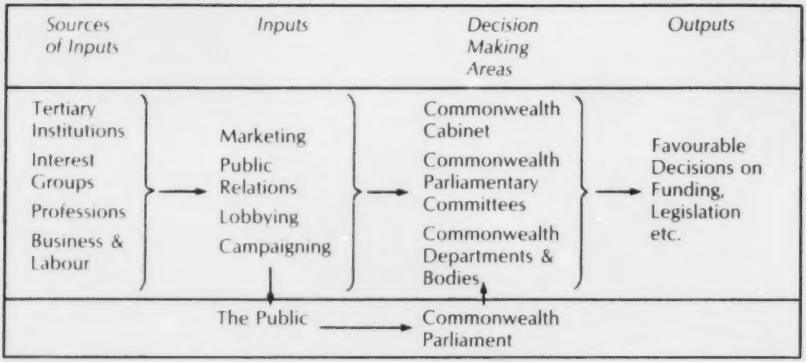
In the U.S.A. there is a much more elaborate example of this co-operative lobby effort. Prompted by the magnitude of budget cuts proposed by President Reagan, nineteen Washington-based higher education groups banded together in January 1982 to form the Action Committee for Higher Education. The committee serves as a national clearinghouse for information on student aid, thus keeping students, parents, the news media, campus officials and others posted on the impact of White House student aid proposals and events in Congress. It produces information kits, publishes a newsletter, supplies spokespersons, and issues news clips on the higher education budget to members of Congress. Perhaps there is a lesson to be learned in this example for Australian tertiary education. Certainly the need exists in Australia for co-operative action.

There is an important role for lobbying in relation to tertiary education. This lobbying has not been done very effectively in the past but the importance of lobbying is being realised and there are indications of improvements being made.

A Model for Promoting Tertiary Education

From a consideration of how tertiary education is currently promoted, and how it might be promoted, in the political arena, it is possible to represent an ideal process in a model (Fig. 1). In this model, a systems approach is used, identifying inputs, flows

Fig. 1. A Model for Promoting Tertiary Education



and outputs. The sources of the inputs are the institutions and groups which are involved in, or have an interest in, tertiary education. From these institutions and groups, come the inputs in the form of marketing, public relations, lobbying and campaigning. These inputs are directed at the decision making areas which include: the Commonwealth Cabinet, Commonwealth parliamentary committees, and Commonwealth departments such as Finance and Education plus such bodies as the Commonwealth Tertiary Education Commission and its subsidiary councils.

Some of the inputs, such as marketing, public relations and campaigning, can be directed at the public, with a view to bringing pressure on members of the Commonwealth Parliament. These members may thus be encouraged to exert pressure on decision-making areas mentioned previously.

The model could be refined and elaborated, but it provides a starting point for thinking about how tertiary education could be promoted in the political arena.

Conclusions

A number of people in positions to make judgements consider that Australian tertiary education has a low political priority. Tertiary education needs promotion, but it must also be able to illustrate satisfactory performance. One without the other will not result in high political priority for tertiary education.

Power in relation to tertiary education rests in certain places and rests mainly at the Commonwealth Government level. It is here that the political priority of tertiary education can be raised. The key areas of government are conscious of public feeling and so efforts to promote tertiary education should also be directed at the public at large.

The promotion of tertiary education has been lacking but the need for improvement is being realized. Not only the tertiary institutions and interest groups, but also governments can devote resources to promoting the standing of tertiary education. Thus government resources can be used to raise the political priority of tertiary education and thereby make the climate more favourable for improved funding.

A model for promoting tertiary education in the political sense can be developed and this model should be reviewed and elaborated from time to time. Such a model focuses attention on the options for actions.

Tertiary education administrators could learn much from the lobbying practised by people in other industries and in other countries. Finally, there could be further scope in Australia for joint action to promote tertiary education — involving staff, students *and* the institutions.

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